ARITHMETIC FOR *Today* 3

BY

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COLUMBUS 15, OHIO

SAN FRANCISCO 5, CALIF. • DALLAS 1, TEXAS • NEW YORK 36, N.Y.

Foreword to the Teacher

Arithmetic has a very essential place in child development. Children need arithmetic for practical competence and to enrich their thinking and living.

Arithmetic in the Third Grade Most children entering the third grade are mature enough to understand the meaning and relationships of all the addition and subtraction facts and to be able to learn them. As the year progresses, the children can learn how to use these facts in adding and subtracting larger numbers.

Most children of this age can also understand and learn effectively the first multiplication and division facts and use these facts in multiplying and dividing numbers of two and three figures by one-figure numbers.

Arithmetic Experiences Should Be Meaningful As they learn facts and skills in the four processes, children should continually apply them in solving problems within their understanding and experience. During the year, children should have many experiences in using measurements of various kinds which they need in their daily activities. They can learn how to make more extensive and intelligent use of the calendar, to apply their knowledge of coins in buying and in making change, and to expand their understanding of adding, subtracting, and multiplying decimal money numbers.

By this time, children's experiences should help them to understand the relationships of numbers in our number system up to a thousand, to read and write the numbers they use, and to associate ordinals with the cardinal numbers. They should begin to understand fractions, especially fractional parts of numbers and measures.

This Book Provides a Complete, Modern Program Children learn best and retain longest what they understand and use. This book provides this kind of functional, meaningful program. In it, arithmetic is taught in close connection with children's experiences at every step, so that children really understand what they are doing.

Many common experiences of children are built into the book, but no textbook can, of course, include all the number experiences which are peculiar to every locality. In the detailed Teachers' Manual which has been prepared to accompany this book, concrete

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suggestions are given for taking advantage of experiences in the local environment.

A New Kind of Manual The manual guides you specifically in helping every child make effective use of each page of this text. For each page, the Guided Learning suggestions cover Step 1: preparation for using the text ("Before Using the Book"); Step 2: the actual use of the book ("Using the Book"); and Step 3: group and individual follow-up activities ("After Using the Book").

There are social as well as learning advantages in having children attack a new topic together. The thinking of one child stimulates the thinking of the rest. For this reason, the first two steps should be carried out *with the entire group*. The children can later work in smaller, flexible groups for the follow-up activities.

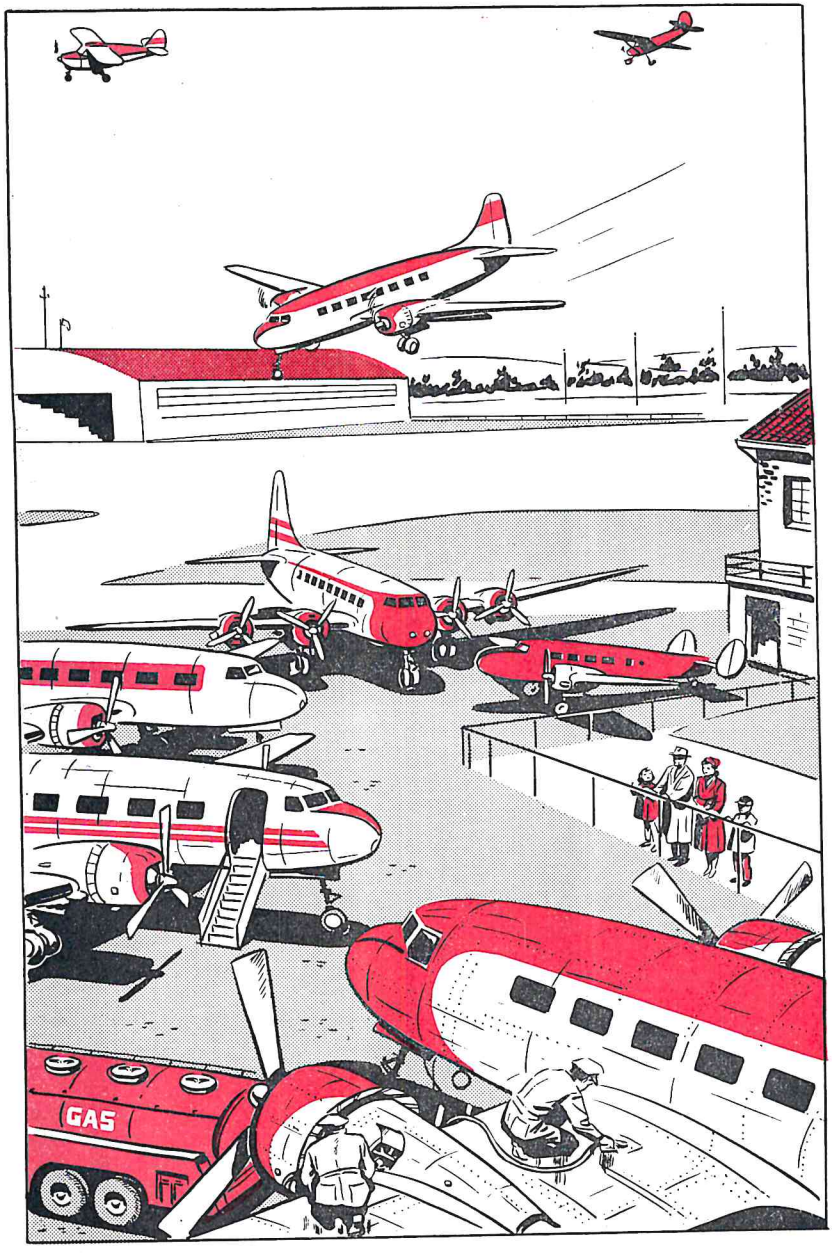
Providing for All Levels of Ability There is ample material in this book to meet the needs of third-grade children. The book is outstanding in the way it provides for *all* levels of arithmetic ability and interest. (1) For children who need additional practice, the manual provides more practice in Step 3. (2) For children who are able to explore arithmetic ideas further, the text includes 62 pages of specially planned "enrichment material" (pages 251-312). These pages at the back of the book are keyed by footnotes to appropriate pages throughout the text.

Arithmetic Learnings Are Interdependent The scope of the learnings for the year, and the principal topics, will be found in the index on pages 314-316. For convenience of reference, the topics are listed alphabetically. Learnings in arithmetic, however, are interdependent, and require an organized program. An understanding of arithmetic is achieved by definite sequential steps. Each step leads to the next. *For this reason, it is important that you follow the order of topics as presented in the book.*

All Children Should Enjoy Arithmetic If children are successful, they will enjoy arithmetic. Each topic in this book starts with easy work so that every child can achieve initial success, and thus gain confidence in arithmetic.

No child should fail arithmetic because of reading difficulties. The reading vocabulary in this book, therefore, is very simple, and new arithmetic words are carefully introduced.

Cumulative Recall and Diagnostic Testing Cumulative reviews have been built into the text to help children maintain learnings. In addition, four sets of diagnostic "Check Tests" are provided to help you and the children discover how much they have learned and to diagnose their needs.


GAS

Can You Use Numbers?

one	two	three	four	five
1	2	3	4	5

six	seven	eight	nine	ten
6	7	8	9	10

Look at the numbers above.

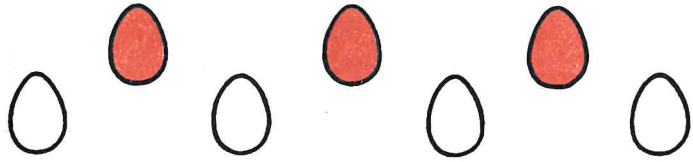
1. What is the second number?
2. What is the third number?
3. What is the last number?
4. What number comes between 2 and 4?
5. What number comes between 4 and 6?
6. What number comes between 7 and 9?
7. What number comes just before 9?
8. What number comes just after 9?

Look at the picture of the airplanes.

9. How many planes do you see?
10. How many planes are in the air?
11. How many planes are on the ground?
12. How many people do you see?
13. How many men are working on the plane?
14. How many people are watching?

Do not write your answers in this book.

Can You Tell How Many?

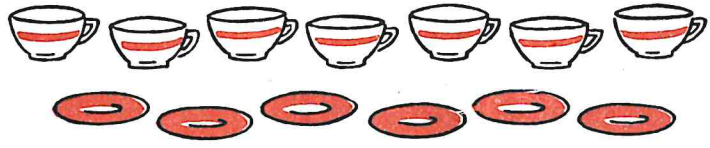


Bob's hens laid these eggs today.

1. Are there 10 eggs, or 7 eggs, or 3 eggs?
2. Bob sold four eggs. How many eggs were left?

This picture shows Bill's marbles.

3. How many brown marbles are there?
4. How many black marbles?
5. How many marbles does Bill have?
6. How many more brown marbles than black marbles does he have?
7. How many fewer black marbles than brown marbles does he have?



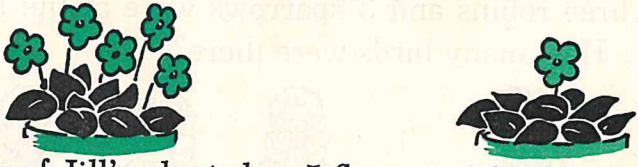
Ellen used these cups and saucers for her party.

8. How many cups did she have?
9. How many saucers did she have?
10. How many more saucers did Ellen need?

Can You Add?

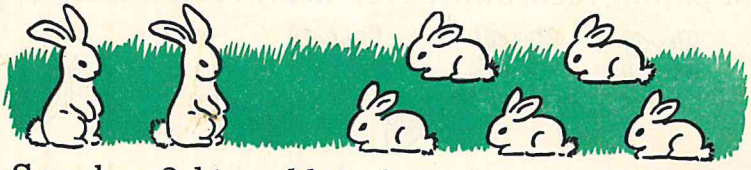
You add to find how many in all.

1. Don catches grasshoppers to watch. This morning he caught 2 grasshoppers. This afternoon he caught 4 more. How many grasshoppers has he?



2. One of Jill's plants has 5 flowers. The other plant has 1 flower. How many flowers are there in all?

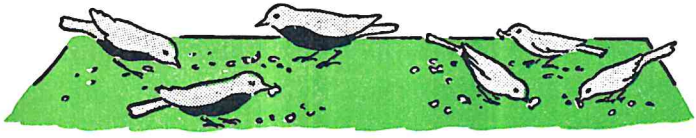
3. Jerry traded for 3 new stamps. Then his father gave him 2 more new stamps. How many new stamps does Jerry have?



4. Sam has 2 big rabbits for pets. He has 5 baby rabbits. How many rabbits does he have in all?

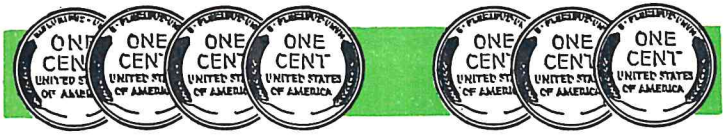
More Problems With Adding

1. Don's mother bought him 4 new shirts. Then he got 1 new shirt for his birthday. How many shirts does Don have now?

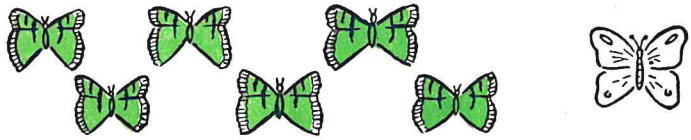


2. Three robins and 3 sparrows were at the feeding tray. How many birds were there?

3. Ann has 1 large doll and 3 small dolls. How many dolls does she have in all?



4. Ellen earned 4 cents for drying dishes and 3 cents for putting them away. How many cents did she earn?



5. Tom counted 6 green butterflies and 1 white butterfly. How many butterflies did Tom see?

Do You Know Addition Facts?

+ means **add.**

= means **are** or **equal.**

Write the answers on another piece of paper.

1. 1 + 2 = ? 2 + 1 = ?	
2. 1 + 3 = ? 3 + 1 = ?	
3. 1 + 4 = ? 4 + 1 = ?	
4. 1 + 5 = ? 5 + 1 = ?	
5. 1 + 6 = ? 6 + 1 = ?	
6. 2 + 3 = ? 3 + 2 = ?	

More Addition Facts

Write the answers on another paper.

	1. $2 + 4 = ?$ $4 + 2 = ?$
	2. $2 + 5 = ?$ $5 + 2 = ?$
	3. $3 + 4 = ?$ $4 + 3 = ?$
	4. $1 + 1 = ?$
	5. $2 + 2 = ?$
	6. $3 + 3 = ?$

	a	b	c
7.	$4 + 2 = ?$	$2 + 5 = ?$	$3 + 4 = ?$
8.	$5 + 2 = ?$	$3 + 3 = ?$	$2 + 4 = ?$
9.	$2 + 3 = ?$	$2 + 2 = ?$	$4 + 3 = ?$

Can You Use Addition Facts?

Use addition facts to do these problems. The numbers to be added are in the boxes. Write the answers on another paper.

1. Five boys and two girls are playing tag. How many children are playing tag?

5 2

2. Jean saw one elephant and six monkeys at the zoo. How many animals did she see?

1 6

3. Tom ate 3 cookies for lunch and 3 cookies for supper. How many cookies did he eat?

3 3

4. Bill has 4 green marbles and 3 yellow marbles. How many marbles has he?

4 3

5. Jill has one mother cat and 4 little cats. How many cats does Jill have?

1 4

6. Ellen bought 5 round cakes and 1 square cake. How many cakes did she buy in all?

5 1

7. Dave had two airplanes. Today he bought two more. How many airplanes has he now?

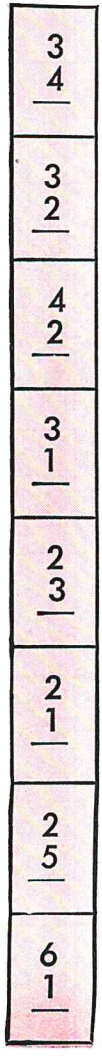
2 2

8. Don picked 2 tomatoes from one plant and 4 tomatoes from another. How many tomatoes did he pick?

2 4

Using More Addition Facts

Here are some more addition problems. Write the answers on another paper. **Do not write in this book.**



1. Nora has 3 books of fairy tales and 4 animal books. How many books has she?

2. Ann's doll has 3 school dresses and 2 good dresses. How many dresses does she have in all?

3. Uncle Frank has 4 brown ponies and 2 spotted ones. How many ponies does he have altogether?

4. Three clowns rode on donkeys. One rode in a jeep. How many clowns were there?

5. Bob found 2 eggs in one nest and 3 eggs in another. How many eggs in all did he find?

6. Jill's mother made 2 apple pies and 1 pumpkin pie. How many pies in all did she make?

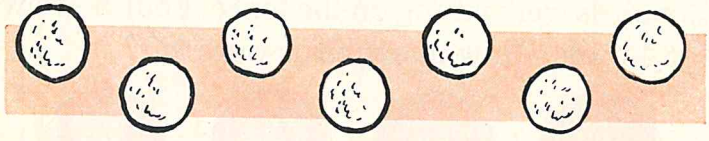
7. Ellen had 2 cents. She earned a nickel. How much money does she have?

8. We had six trees in our yard. Today we planted one more. How many trees do we have now?

More Subtraction Problems

Here are some more subtraction problems. Write the answers on another paper.

1. Tom had 5 pennies. He spent one for some candy. How many pennies did he have then?



2. Bill made 7 snowballs. He threw 2 of them at a tree. How many snowballs did he have left?

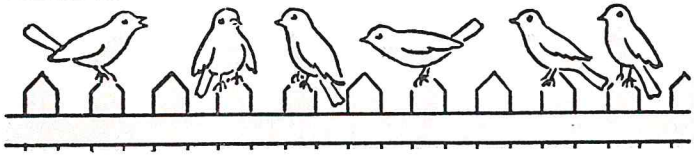
3. Jill saw 5 roses on a bush. She picked 2 of them. How many roses were left on the bush?

4. Tom found 4 golf balls and gave his father one of them. How many golf balls did he have left?

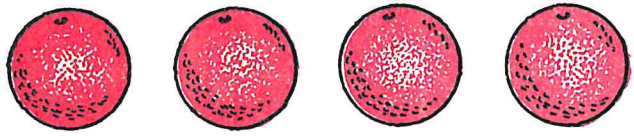
5. There are 7 children in our block. Three children went to camp last summer. How many stayed home?

How Many Are Left?

You **subtract** to find **how many are left.**

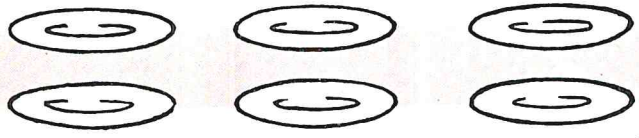


1. Six birds were sitting on the fence. Four flew away. Cover 4 birds. How many birds were left?



2. Don and Jill had 4 oranges. They were hungry and ate two. Cover 2 oranges. How many oranges did they have left?

3. Seven boys were playing ball. Five of the boys were called home to supper. How many were left?



4. Ann had 6 doll plates. She let Jean use 3 of them for a doll party. How many plates did Ann have left?

Do You Know Subtraction Facts?

— is minus. It means subtract.

Write the answers to these subtraction facts on another paper. If you do not remember the answers, you can find the number left by covering some dots.

1. 2 — 1 = ?	
2. 3 — 1 = ?	
3. 3 — 2 = ?	
4. 4 — 1 = ?	
5. 4 — 2 = ?	
6. 4 — 3 = ?	
7. 5 — 1 = ?	
8. 5 — 2 = ?	
9. 5 — 3 = ?	
10. 5 — 4 = ?	

More Subtraction Facts

Write the answers to these subtraction facts on another paper.

	1. 6 − 1 = ?
	2. 6 − 2 = ?
	3. 6 − 3 = ?
	4. 6 − 4 = ?
	5. 6 − 5 = ?
	6. 7 − 1 = ?
	7. 7 − 2 = ?
	8. 7 − 3 = ?
	9. 7 − 4 = ?
	10. 7 − 5 = ?
	11. 7 − 6 = ?

Can You Use Subtraction Facts?

Use subtraction facts to do these problems. The numbers to be subtracted are in the boxes.

1. Don's mother baked 3 pies. She took 1 pie to Aunt Mary. How many pies were left?

2. Sam caught 4 fish. He threw 2 small ones back. How many fish did he have left?

3. Ann had 6 dolls. She gave Jean 3 to play with. How many dolls did Ann have left?

4. Ellen had 7 cents and spent 4 cents for an apple. How many cents were left?

5. Ann had a nickel and spent 4 cents. How many cents did she have then?

6. Six frogs sat on a log. Two frogs jumped off the log. How many were left?

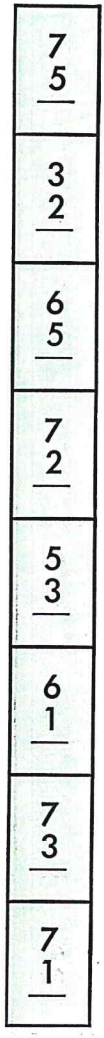
7. Don will visit his uncle for 5 days. He has been there 2 days. How many days of his visit are left?

8. There were 4 apples on a little tree. Three of them fell off. How many were left?

3 1
4 2
6 3
7 4
5 4
6 2
5 2
4 3

More Subtraction Problems

Here are some more subtraction problems. Write the answers on another paper.



1. Jim saw 7 bears in the bear house. Five went out into the yard. How many bears were left in the house?

2. Jill picked 3 ripe peaches and ate 2 of them. How many peaches did she have left?

3. Jean had 6 pictures of cats. She gave 5 of them away. How many did she keep?

4. Seven crows sat on a tree. Two crows flew away. How many crows were left?

5. Nora got 5 books for her birthday. She has now read 3 of them. How many books has she still to read?

6. Tom bought 6 cookies. On the way home, he ate one. How many cookies were left?

7. Jim had 7 problems to do. He has done 3. How many problems are left to do?

8. Ellen had 7 hair ribbons. She gave one to Jean. How many ribbons has she now?

Numbers to 100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

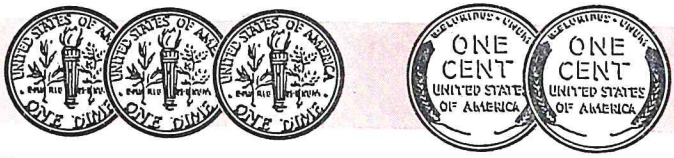
Look at the number table. It will help you find the answers to the questions on this page. Write the answers on another paper.

1. What number comes just after 12?
2. What number comes just after 21?
3. What number comes just after 29?
4. What number comes just after 80?
5. What number comes just before 35?
6. What number comes just before 71?
7. What number comes just before 100?
8. What number comes between 56 and 58?
9. What number comes between 90 and 92?
10. What number comes between 49 and 51?

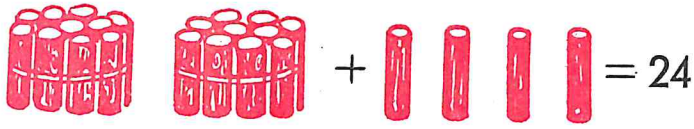
Do You Know What Numbers Mean?

A dime is worth 10 cents.

1. This is a picture of Ellen's money. She has 13 cents. How many dimes does she have? How many pennies?



2. The picture above shows Tom's money. He has 32 cents. How many dimes are there in 32 cents? How many cents?



tens ones

3. 24 means 2 tens and 4 ones. How many tens does 48 mean? How many ones?

4. 75 means how many tens and how many ones?

5. Write the number that means 3 tens and 2 ones.

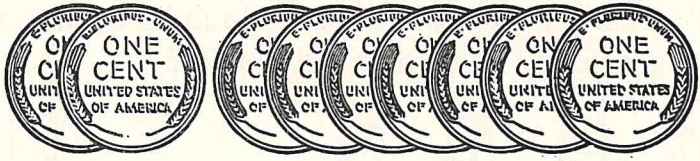
6. Which number is larger, 36 or 63?

7. Which number is smaller, 71 or 49?

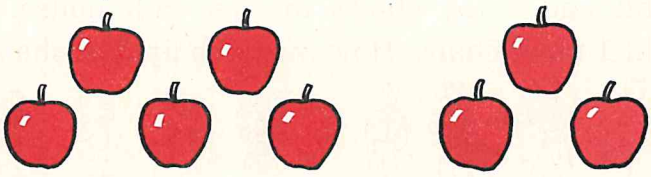
8. Which number is larger, 57 or 72?

Using Addition Facts in Problems

In these problems you use some more addition facts. The pictures will help you find the answers. Write the answers on another paper.

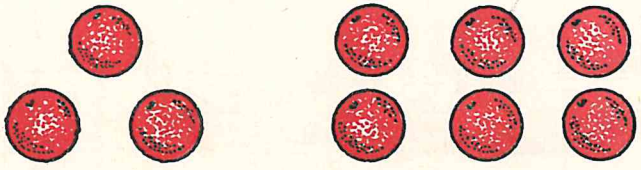


1. Ann found 2 cents. She already had 7 cents. How much money did she have then?



2. Mother had 5 apples. "I need 3 more for a pie," she said. How many apples will she use for the pie?

3. Dave bought an ice cream cone for 6 cents and an apple for 4 cents. How much did he spend for both?



4. We had 3 oranges. Father bought 6 more at the store. How many oranges did we have then?

More Addition Problems

1. Tom collects pretty stones. He found 4 brown ones and 5 gray ones. How many did he find?

2. Ann had 8 toy chairs for her doll house. She bought 1 more chair. How many chairs has she now?

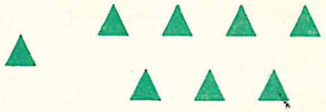
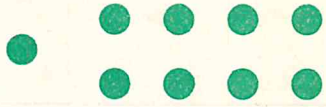
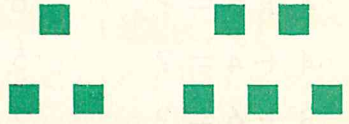
3. Four boys and four girls are playing tag. How many children in all are playing tag?

4. Seven black ants and 3 brown ants crawled over the walk. How many ants did Don count in all?

5. Jerry had 6 toy boats. Uncle Mack gave him 2 more. How many boats did Jerry have then?

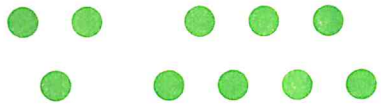
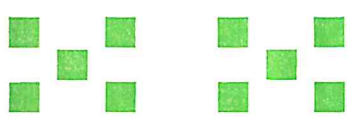
Do You Know These Addition Facts?

Write the answers on another paper.

1. $1 + 7 = ?$ $7 + 1 = ?$	
2. $1 + 8 = ?$ $8 + 1 = ?$	
3. $1 + 9 = ?$ $9 + 1 = ?$	
4. $2 + 6 = ?$ $6 + 2 = ?$	
5. $2 + 7 = ?$ $7 + 2 = ?$	
6. $2 + 8 = ?$ $8 + 2 = ?$	
7. $3 + 5 = ?$ $5 + 3 = ?$	

More Addition Facts

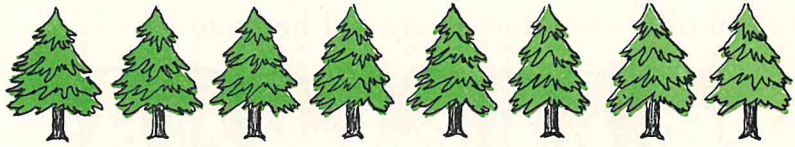
Write the answers on another paper.

	1. 3 + 6 = ? 6 + 3 = ?
	**2.** 3 + 7 = ? 7 + 3 = ?
	3. 4 + 5 = ? 5 + 4 = ?
	4. 4 + 6 = ? 6 + 4 = ?
	5. 4 + 4 = ?
	**6.** 5 + 5 = ?

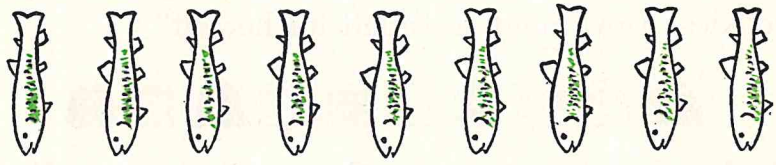
	a	b	c
7.	4 + 5 = ?	6 + 3 = ?	3 + 7 = ?
8.	4 + 4 = ?	5 + 5 = ?	4 + 6 = ?
9.	3 + 6 = ?	2 + 8 = ?	5 + 4 = ?

Can You Subtract These?

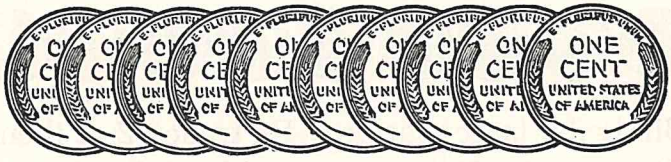
In these problems you use some more subtraction facts. The pictures will help you find the answers. Cover some of the pictures if you need to. Write your answers on another paper.



1. Eight pine trees grew by the road. Two trees were cut down. Cover 2 trees. How many were left?



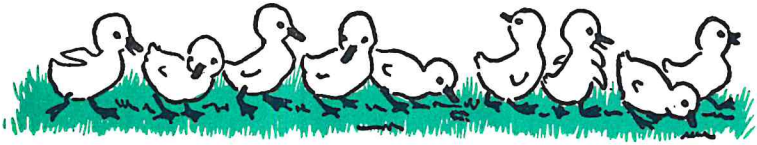
2. The zoo man had 9 fish. He fed 5 fish to the seals. How many fish did the man have left?



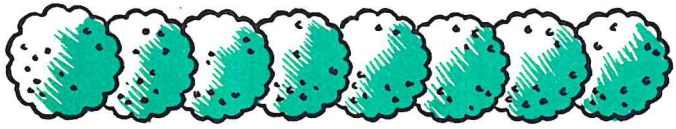
3. Ellen had 10 pennies. She bought a three-cent stamp. How many pennies did she have then?

4. Eight children were playing ball. Four decided to play cowboy. How many were left playing ball?

Some More Subtraction



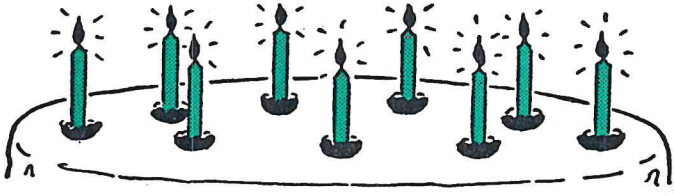
1. Don's father is a farmer. He had 9 ducks. He sold 6 of them. How many did he have left?



2. Sue brought 8 cookies to school. She gave away 5 cookies. How many were left for herself?

3. Ann had 10 gumdrops. She ate 6 of them. How many gumdrops did she have left?

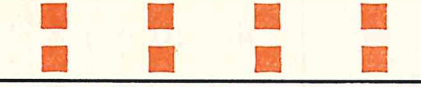
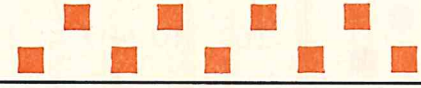
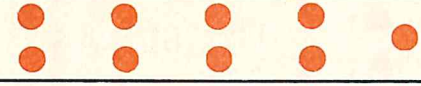
4. Bill had 9 large marbles. He traded 2 of them for a police whistle. How many marbles did he have left?



5. Ellen had 9 candles on her birthday cake. She blew out 3 candles. How many were still burning?

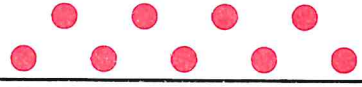
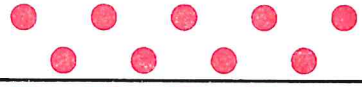
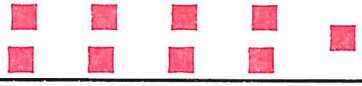
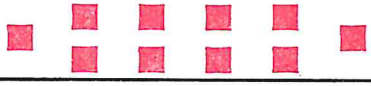
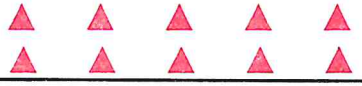
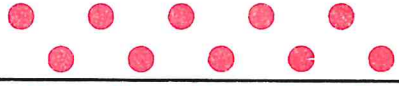
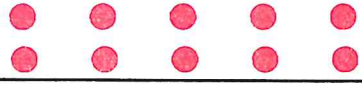
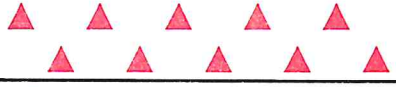
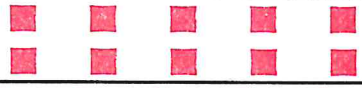
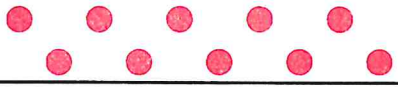
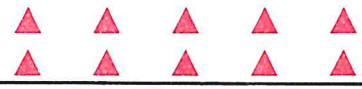
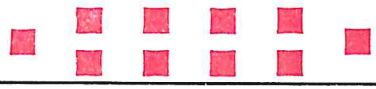
Do You Know Subtraction Facts?

Write the answers to these subtraction facts on another paper. Cover dots if you need to.

	1. 8 − 1 = ?
	2. 8 − 2 = ?
	3. 8 − 3 = ?
	4. 8 − 4 = ?
	5. 8 − 5 = ?
	6. 8 − 6 = ?
	7. 8 − 7 = ?
	8. 9 − 1 = ?
	9. 9 − 2 = ?
	10. 9 − 3 = ?
	11. 9 − 4 = ?
	12. 9 − 5 = ?

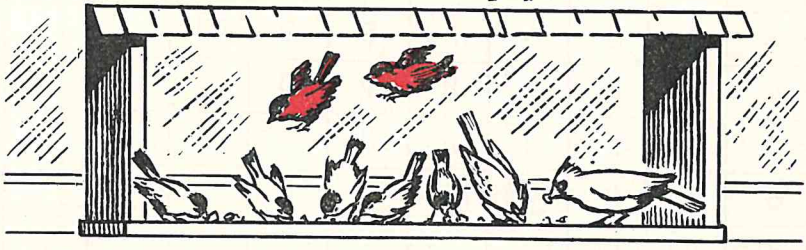
More Subtraction Facts

Write the answers on another paper. Use the pictures to help find the answers if you need to.

	1. 9 − 6 = ?
	2. 9 − 7 = ?
	3. 9 − 8 = ?
	4. 10 − 1 = ?
	5. 10 − 2 = ?
	6. 10 − 3 = ?
	7. 10 − 4 = ?
	8. 10 − 5 = ?
	9. 10 − 6 = ?
	10. 10 − 7 = ?
	11. 10 − 8 = ?
	12. 10 − 9 = ?

Do You Add or Subtract?

In some of these problems you will add to find the answer. In some problems you will subtract. The numbers to be added or subtracted are in the boxes. Write your answers on another paper.



1. Dick made a feeding box for the birds. He counted 7 birds eating in the box. Two more birds flew in. How many birds were in the box then?

7 2

2. Jerry's father gave him 8 pennies. Jerry spent 3 of them for candy. How many pennies did Jerry have left?

8 3

3. Nora has 4 books at school. She has 4 more books at home. How many books does Nora have altogether?

4 4

4. There were 8 rose bushes in Jill's garden. Her mother bought 2 more. How many rose bushes are there now?

8 2

5. Jill picked 5 roses. She gave her mother 4 of them. How many roses did Jill keep for herself?

5 4

A Magic Number Table

	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	10
2	3	4	5	6	7	8	9	10	
3	4	5	6	7	8	9	10		
4	5	6	7	8	9	10			
5	6	7	8	9	10				
6	7	8	9	10					
7	8	9	10						
8	9	10							
9	10								

Use this table to find what addition and subtraction facts belong together.

The 7 in the circle shows that 4 (in the top row) and 3 (at the left) are 7. It also shows that $3 + 4 = 7$ and $7 - 4 = 3$ and $7 - 3 = 4$.

1. The 9 in the circle shows that $3 + 6 = 9$. Write on another paper the other addition fact and the subtraction facts it shows.

2. In the table, can you find the 10 that shows that $5 + 5 = 10$? Write the subtraction fact this shows.

3. Find a 6 that shows that $4 + 2 = 6$. Write the other three facts this shows.

Using the Magic Number Table

Use the table on page 26 to find these facts that belong together. Copy on another paper the 4 facts in each example and write the answers.

1. $1 + 2 = ?$ $2 + 1 = ?$ $3 - 2 = ?$ $3 - 1 = ?$
2. $1 + 7 = ?$ $7 + 1 = ?$ $8 - 7 = ?$ $8 - 1 = ?$
3. $2 + 3 = ?$ $3 + 2 = ?$ $5 - 3 = ?$ $5 - 2 = ?$
4. $2 + 5 = ?$ $5 + 2 = ?$ $7 - 5 = ?$ $7 - 2 = ?$
5. $4 + 5 = ?$ $5 + 4 = ?$ $9 - 5 = ?$ $9 - 4 = ?$
6. $6 + 2 = ?$ $2 + 6 = ?$ $8 - 6 = ?$ $8 - 2 = ?$
7. $2 + 7 = ?$ $7 + 2 = ?$ $9 - 7 = ?$ $9 - 2 = ?$
8. $3 + 5 = ?$ $5 + 3 = ?$ $8 - 3 = ?$ $8 - 5 = ?$

Making Sure of Addition

Here are some easy addition examples you have had. Write the answers on another paper. Draw circles around any answers you get wrong. Look up the right answers on page 26 and study the examples later.

	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*
1.	5 5	2 4	8 1	5 3	6 4	2 7	3 5	6 2	9 1
2.	1 6	6 3	8 2	7 3	4 4	3 4	2 8	1 7	3 6
3.	2 6	3 3	5 4	4 6	6 1	2 2	4 5	3 2	2 5

Add or Subtract?

In each problem, think what to do to find the answer. Write the answers on another paper.

7 − 2 =
6 + 3 =
10 − 7 =
4 + 3 =
9 − 3 =
6 + 4 =
5 + 3 =
8 − 2 =

1. Seven birds came to Dick's feeding box. Two saw a cat and flew away. How many stayed?

2. Jerry has 6 goldfish. His uncle gave him three new fish. How many fish has he now?

3. Ellen had a dime. She bought a tablet that cost 7 cents. How many cents did she get back in change?

4. Ann has 4 dolls. Jean has 3 dolls. The girls gave a party for all their dolls. How many dolls were there?

5. Sam caught 9 frogs. Three of them got away. How many frogs did Sam bring home?

6. We made 6 fancy hats for a party. Mother made 4 more hats for us. How many fancy hats did we have altogether?

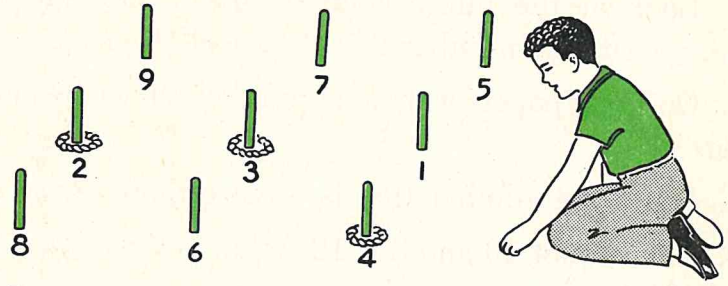
7. One of Ann's dolls has 5 dresses. Ann is making her 3 more dresses. How many dresses will she have then?

8. There are 8 new kittens at Jill's house. Two of the kittens will be given away. How many kittens will be left?

Pages 251 and 252 provide enrichment material which can be used after this page.

Adding Three Scores

In addition, the answer is called the sum.



1. In a game of ring toss, Bill made 2 points with his first throw. He made 3 points with his second throw. How many points did he make with his first two throws? $2 + 3 = ?$

2. Bill made 4 points with his third throw. How many points did he make in all? $5 + 4 = ?$

Add these scores. In each example, add the two top numbers first. Then add the bottom number to their sum. Write the answers on another paper. In the first example, think "4, 6" and write 6.

	a	b	c	d	e	f	g	h	i
3.	3	2	3	1	3	3	4	5	2
	1	2	1	4	5	3	2	2	2
	2	2	5	2	1	3	1	1	4
4.	4	4	1	1	1	1	3	3	4
	4	1	1	6	2	4	4	1	3
	1	4	3	2	3	3	2	3	2

Adding Larger Numbers

10	11	12	13	14	15	16	17	18	19

1. Look at the number table above. On another paper, write the number that is 2 more than 14.

2. On your paper, write the number that is 3 more than 10.

3. Write the number that is 6 more than 12.

4. The sum of 10 and 8 is 18. What is the sum of 11 and 4?

On your paper, write the sums for the addition examples below.

	a	*b*	*c*	*d*	e	*f*	*g*
5.	10 5	13 1	11 5	15 2	16 2	14 4	11 3
6.	15 4	10 7	12 4	10 6	14 5	13 2	15 3
7.	12 5	17 1	12 2	11 7	13 3	12 6	10 4
8.	14 1	12 7	16 3	11 6	18 1	13 6	13 4
9.	10 2	14 2	16 1	12 1	11 4	10 3	11 8
10.	15 1	11 8	10 9	14 3	10 8	12 3	11 2

Subtracting Larger Numbers

1. Look at the number table on page 30. On a paper, write the number that is 1 less than 16.

2. On your paper, write the number that is 3 less than 17.

3. Write the number that is 6 less than 19.

4. When you subtract 4 from 18, the answer is 14. Subtract 5 from 17. Write the answer on your paper.

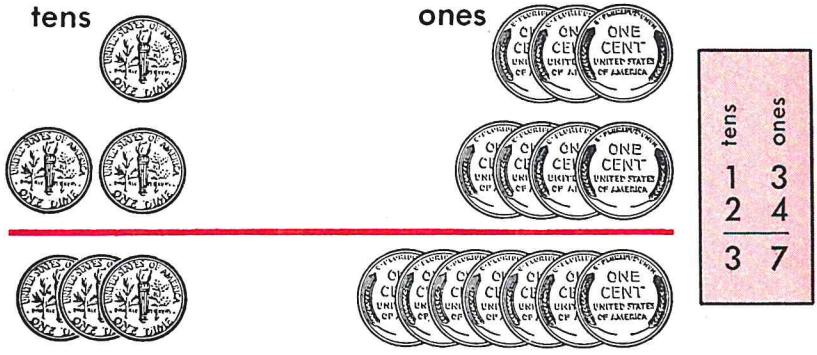
Subtract in the examples below. Write the answers on your paper.

	a	*b*	*c*	*d*	*e*	*f*	*g*
5.	17 3	15 3	16 5	18 5	14 2	19 3	15 4
6.	12 2	13 1	18 6	17 4	14 4	18 4	19 6
7.	19 5	18 2	16 3	14 1	17 2	15 2	19 8
8.	13 2	18 3	16 4	15 5	19 4	16 1	17 6
9.	12 1	16 2	19 9	18 7	19 2	18 3	16 6
10.	17 5	18 8	17 4	19 7	15 1	16 5	17 1
11.	11 1	14 3	17 7	18 1	19 5	13 3	19 1

At the Store

¢ means **cent** or **cents.**

At the store, Jerry bought some apples for 13¢ and a box of cookies for 24¢. The picture below shows you how to find out how much money Jerry spent.



tens	ones
1	3
2	4
3	7

First, add the pennies, (the *ones*.) 3 ones and 4 ones are 7 ones. You write the 7 in the ones column, as shown in the box above.

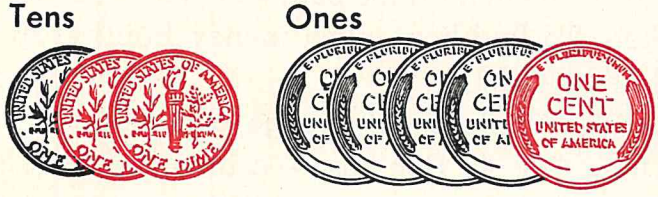
Then add the dimes. (A dime is 10 cents.) 1 ten and 2 tens are 3 tens. You write the 3 in the tens column. Jerry spent 37 cents.

Add the money numbers in the examples below.

	a	b	c	d	e	f
1.	21¢ 38¢	47¢ 22¢	12¢ 17¢	72¢ 16¢	33¢ 45¢	51¢ 48¢
2.	64¢ 24¢	83¢ 13¢	56¢ 23¢	73¢ 25¢	42¢ 26¢	53¢ 44¢

How Much Change?

Sally went to the store. She had 35 cents in her purse. She bought some pears that cost 21 cents. The picture below shows you how to find how much money she had left.



tens	ones
3	5
2	1
1	4

First, take away the colored cent. You have 4 cents left. You write the 4 in the ones column.

Next, take away 2 dimes (the colored dimes). Only 1 dime is left. You write the 1 in the tens column. Sally had 14 cents left.

Make up subtraction stories about how much money is left when you buy something at the store.

Subtract the money numbers in the examples.

	a	*b*	*c*	*d*	*e*	*f*
1.	58¢ 25¢	43¢ 12¢	89¢ 75¢	87¢ 62¢	65¢ 23¢	76¢ 55¢
2.	38¢ 14¢	99¢ 26¢	46¢ 33¢	87¢ 34¢	97¢ 62¢	99¢ 57¢
3.	68¢ 32¢	49¢ 24¢	78¢ 53¢	85¢ 14¢	26¢ 14¢	77¢ 16¢
4.	95¢ 81¢	87¢ 64¢	68¢ 12¢	97¢ 33¢	89¢ 43¢	99¢ 17¢

Adding With Zero

0 is zero. It means none.

Bob has 60 cents in his dime bank. He has 14 cents in his pocket. To find how much money Bob has in all, you add 60¢ and 14¢.

$$\begin{array}{r} 60¢ \\ 14¢ \\ \hline 74¢ \end{array}$$

Adding 0 does not change a number.

So $0 + 4 = 4$. Bob has 74 cents in all.

1. The sum of 30 and 20 is 50. Write the sum of 10 and 20 on another paper. $(0 + 0 = 0)$

2. Write the sum of 37 and 10 on your paper.

Write these sums on your paper. Start at the right in each example.

	a	b	c	d	e	f
3.	27 42	15 11	30 11	19 20	23 30	46 11
4.	18 30	20 27	36 20	50 35	20 12	50 43
5.	30 60	11 45	70 16	21 30	11 67	43 40
6.	27 40	64 33	21 70	85 12	22 56	32 67
7.	30 44	12 87	44 50	50 30	40 14	20 36

Subtracting With Zero

Jill picked 36 flowers. She gave her mother 20 of the flowers. To find how many flowers Jill had left, subtract 20 from 36.

Subtracting 0 from a number does not change the number. So $6 - 0 = 6$. Jill had 16 flowers left.

$$\begin{array}{r} 36 \\ 20 \\ \hline 16 \end{array}$$

1. $50 - 20 = 30$. Subtract 10 from 30 and write the answer on another paper. $(0 - 0 = 0)$

Any number minus the same number equals zero.

2. $75 - 35 = 40$. Subtract 12 from 52 and write the answer on your paper.

Subtract and write the answers on your paper. Start at the right in each example.

	a	b	c	d	e	f
3.	36 13	46 14	63 23	97 35	52 30	89 67
4.	29 16	18 5	48 30	67 57	76 11	59 14
5.	47 23	69 68	19 12	87 30	54 40	92 52
6.	70 20	48 42	84 32	73 60	88 78	64 53
7.	87 13	85 40	96 90	98 48	87 60	79 26

Page 253 provides enrichment material which can be used after this page.

Using a Calendar

A week is 7 days.

OCTOBER						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

1. Don's birthday is October 16. What day of the week is October 16 on this calendar?

2. What day is October 23? October 1? October 31?

3. How many days are there in a week?

4. What day is the first day of the week?

5. What day is the second day of the week?

6. What day is the last day of the week?

7. What day is the sixth day?

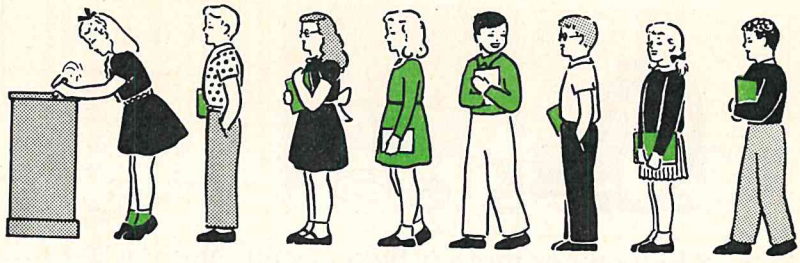
8. Write the numbers for the words below:

a. ten, eleven, twelve, thirteen, fourteen, fifteen.

b. sixteen, seventeen, eighteen, nineteen, twenty.

c. twenty-one, twenty-two, twenty-three, twenty-four.

Number Words a Short Way



The children are in line for a drink.

Jill is the first girl in the line. A short way to write "first" is **1st.**

Bob is the next child in the line. He is second. A short way to write "second" is **2d.** "Third" is **3d.**

Sue is the girl in the green dress. She is fourth in the line. A short way to write "fourth" is **4th.**

1. Nora is the girl with glasses. What is her place in the line? On a paper, write this number a short way.

2. Sam is the boy in a green shirt. What is his place in the line? On your paper, write this number a short way.

3. Allen is the boy with glasses. Write the number of his place in the line a short way.

4. On your paper, write the numbers below a short way.

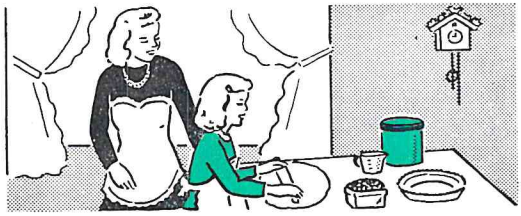
a. ninth, tenth, eleventh, twelfth, thirteenth.

b. eighteenth, nineteenth, twentieth, twenty-first.

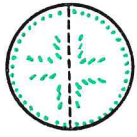
c. twenty-second, twenty-third, thirtieth.

Pages 254 and 255 provide enrichment material which can be used after this page.

Halves

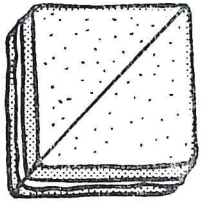


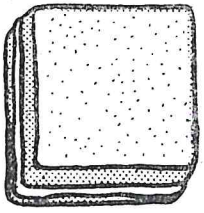
A half is $\frac{1}{2}$.



1. Sue helped her mother bake a small pie. Sue wants to share the pie equally with her brother. She and Bob will each have one half of the pie.

Draw a picture of the pie on another paper. Draw a line through your picture to show how to cut the pie in half. "One half" is written "$\frac{1}{2}$"





2. Here are two sandwiches Ellen made for her party. She wants to cut the sandwiches into halves.

Get a square piece of paper. Fold it to show how the first sandwich is cut into 2 parts of the same size.

Get another square piece of paper. Draw a line on it to show a different way to divide the other sandwich into halves. Write "$\frac{1}{2}$" on each half.

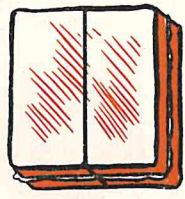
3. Draw a picture of an orange. Draw a line on it to show how Bill can cut the orange into halves. Mark each half "$\frac{1}{2}$".

4. Draw a picture of a candy bar. Show how to divide it into halves.

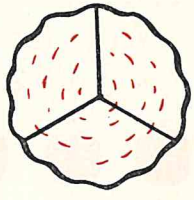
Fourths and Thirds

A fourth is $\frac{1}{4}$. A third is $\frac{1}{3}$.

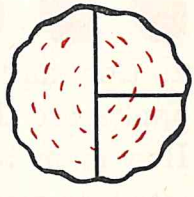
1. This sandwich is marked in halves. Mark a square piece of paper the same way. Draw another line on your paper to show how to cut it into fourths. There are 4 fourths. All the fourths should be the same size. "One fourth" is written $\frac{1}{4}$. Write $\frac{1}{4}$ on each fourth of your paper.



2. Sue made a large cookie. The picture shows how she divided it into *thirds*. Sue, Jill, and Nora each had a piece the same size.

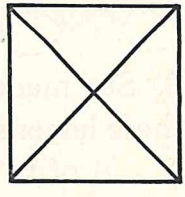


3. Suppose Sue had divided her cookie this way. Would each girl have had a piece the same size? These pieces are *not* thirds.



4. Draw a picture of a candy bar and show how to divide it into thirds.

5. Mark a square piece of paper like this. Color one fourth of your square red. Color 3 fourths blue. Fold your square and cut it into fourths to show that all the fourths are the same size.



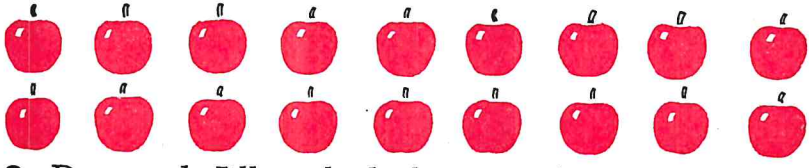
Doubles and Halves

A dozen is 12. $\frac{1}{2}$ dozen is 6.

1. Bob had a dozen eggs for sale. Each side of the egg box holds a half dozen eggs. Bob's mother bought a half dozen eggs from Bob. How many eggs did Bob have left?

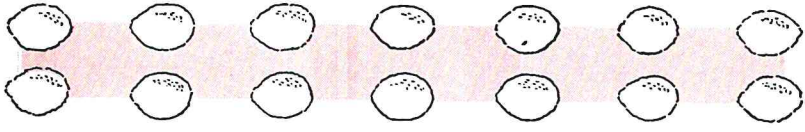
Write the answers on another paper.

$\frac{1}{2}$ of 12 = ? 6 + 6 = ? 12 − 6 = ?



2. Don and Jill picked these apples. How many apples are there? They divided the apples equally. How many apples did Don get as his half? Jill's half was how many apples?

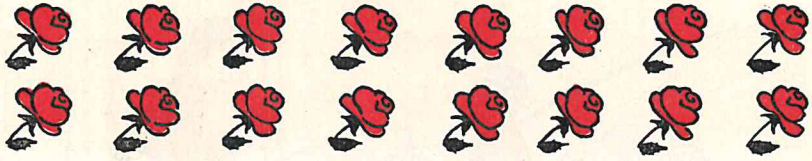
$\frac{1}{2}$ of 18 = ? 9 + 9 = ? 18 − 9 = ?



3. Sue made lemonade for a picnic. She used half of these lemons. How many lemons did she use?

$\frac{1}{2}$ of 14 = ? 7 + 7 = ? 14 − 7 = ?

Facts About Doubles and Halves



1. This is a picture of the roses Jill picked. How many roses did she pick altogether? She took half of the roses to school. How many did she take to school? How many did she leave at home?

Write the answers on another paper.

$\frac{1}{2}$ of 16 = ? 8 + 8 = ? 16 − 8 = ?

Write the sums of these **doubles** on your paper.

	a	*b*	*c*	*d*	e	*f*	*g*	*h*	*i*
2.	1	2	3	4	5	6	7	8	9
	1	2	3	4	5	6	7	8	9

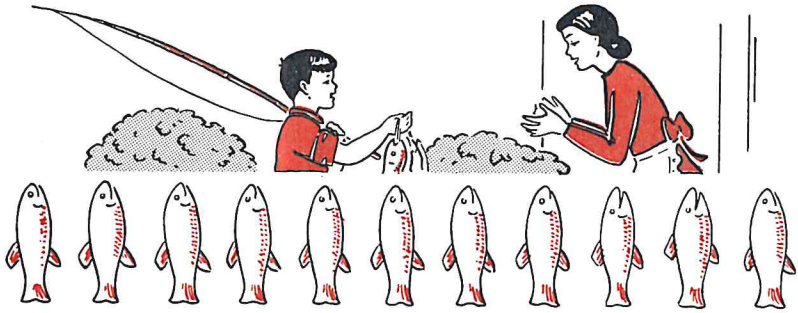
Do you know these subtraction facts? Subtract and write the answers. The number in your answer is **one half** of the number you subtract from.

3.	2	4	6	8	10	12	14	16	18
	1	2	3	4	5	6	7	8	9

Learn these facts about doubles and halves.

New Addition Facts				New Subtraction Facts			
6	7	8	9	12	14	16	18
6	7	8	9	6	7	8	9
12	14	16	18	6	7	8	9

Sam's Fish



Sam caught 11 fish. He wants to give some of the fish to his grandmother and the rest to his mother. This page shows four ways Sam can divide the fish.

Draw the fish and write the answers.

1. Suppose Sam gives 2 fish to his grandmother, and the rest to his mother.

$11 - 2 = ?$ $2 + 9 = ?$ $9 + 2 = ?$ $11 - 9 = ?$

2. Suppose Sam gives 3 fish to his grandmother.

$11 - 3 = ?$ $3 + 8 = ?$ $8 + 3 = ?$ $11 - 8 = ?$

3. Suppose his grandmother gets 4 fish.

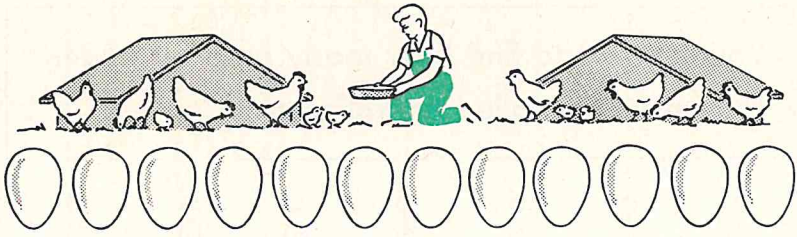
$11 - 4 = ?$ $4 + 7 = ?$ $7 + 4 = ?$ $11 - 7 = ?$

4. Suppose he gives his grandmother 5 fish.

$11 - 5 = ?$ $5 + 6 = ?$ $6 + 5 = ?$ $11 - 6 = ?$

New Addition Facts								New Subtraction Facts							
2	3	4	5	6	7	8	9	11	11	11	11	11	11	11	11
9	8	7	6	5	4	3	2	9	8	7	6	5	4	3	2
11	11	11	11	11	11	11	11	2	3	4	5	6	7	8	9

Bob's Eggs



Bob's hens laid a dozen eggs today. Bob will give some of the eggs to his mother. He will sell the rest of the eggs. The problems on this page show different ways Bob can divide his eggs.

On another paper, draw the eggs Bob gives his mother in each problem and the eggs he will sell. Write the answers, too.

1. Suppose Bob gives his mother half of the eggs and sells the rest. $12 - 6 = ?$ $6 + 6 = ?$

2. Suppose Bob gives 3 eggs to his mother.
$12 - 3 = ?$ $3 + 9 = ?$ $9 + 3 = ?$ $12 - 9 = ?$

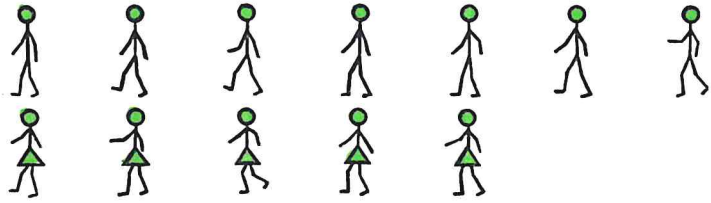
3. Suppose Bob gives his mother 4 eggs.
$12 - 4 = ?$ $4 + 8 = ?$ $8 + 4 = ?$ $12 - 8 = ?$

4. Suppose Bob gives his mother 5 eggs.
$12 - 5 = ?$ $5 + 7 = ?$ $7 + 5 = ?$ $12 - 7 = ?$

New Addition Facts						New Subtraction Facts					
9	8	7	5	4	3	12	12	12	12	12	12
3	4	5	7	8	9	3	4	5	7	8	9
12	12	12	12	12	12	9	8	7	5	4	3

Finding How Many More or Fewer

You **subtract** to find **how many more or fewer.**
The **answer** is called the **difference.**



Seven boys and 5 girls came to a picnic. How many more boys than girls were there? How many fewer girls than boys were there?

$$\begin{array}{r} 7 \\ 5 \\ \hline 2 \end{array}$$

To find out, you compare the size of the two groups by subtracting the smaller number from the larger number. The answer is called the **difference** between the two numbers.

Use subtraction facts to do these problems.

1. Bill has 12 marbles. Tony has 9 marbles. How many more marbles does Bill have than Tony? How many fewer marbles does Tony have than Bill?

2. Jean made 14 Christmas cards. She bought 7 cards at the store. How many more cards did she make than she bought?

3. Sue made 4 large gingerbread men and 12 small ones. How many fewer large gingerbread men than small ones did she make?

How Many More or Fewer?

Use subtraction facts to do these problems. Write the answers on another paper.

1. A big ice cream cone costs 10 cents. A lollipop costs 3 cents. How much less than the cone does the lollipop cost? How much more than the lollipop does the cone cost?

2. Today Bob's hens laid 11 white eggs and 7 brown eggs. How many fewer brown eggs did Bob get?

3. Don picked 8 apples at home and 12 apples at his grandmother's. How many more did he pick at his grandmother's?

4. Bill and Ann were playing ring toss. Bill made 9 points and Ann made 11 points. How many more points did Ann make than Bill?

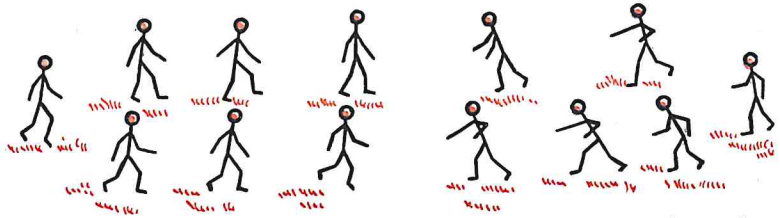
5. Yesterday at the seashore Tony found 12 shells. Today he found 7 shells. How many fewer did he find today than he did yesterday?

Do You Remember Subtraction Facts?

Write the differences on another paper.

	a	*b*	*c*	*d*	*e*	*f*	*g*
1.	10 − 6	12 − 3	8 − 5	11 − 2	10 − 7	11 − 6	9 − 7
2.	16 − 8	10 − 1	11 − 4	12 − 5	11 − 8	9 − 3	18 − 9

On the Playground



Thirteen boys from Bill's room are on the playground. Some of the boys want to play tag. Some want to play ball. The problems on this page show different ways they can divide up.

Draw the boys and write the answers.

1. Suppose 4 boys play tag and the rest play ball.
$13 - 4 = ?$ $4 + ? = 13$ $? + 4 = 13$ $13 - ? = 4$

2. Suppose 5 boys play tag and the rest play ball.
$13 - 5 = ?$ $5 + ? = 13$ $? + 5 = 13$ $13 - ? = 5$

3. Find how many boys will play ball if 6 play tag.
$13 - 6 = ?$ $6 + ? = 13$ $? + 6 = 13$ $13 - ? = 6$

Just write the answers to the next problems.

4. If 7 boys play tag, how many will play ball?

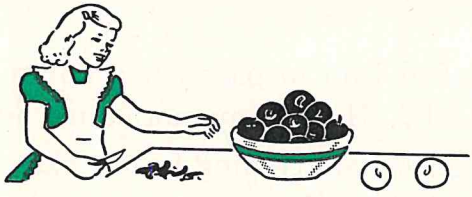
5. If 8 boys play tag, how many will play ball?

6. If 9 boys play tag, how many will play ball?

New Addition Facts						New Subtraction Facts					
9	8	7	6	5	4	13	13	13	13	13	13
4	5	6	7	8	9	4	5	6	7	8	9
13	13	13	13	13	13	9	8	7	6	5	4

Finding How Many Are Needed

You **subtract** to find **how many are needed.**



Sue is making an apple pie. She wants to put 6 apples in the pie. She has peeled 2 apples. To find how many apples Sue still needs to peel, you subtract 2 from 6. Four more apples are needed.

$$\begin{array}{r} 6 \\ 2 \\ \hline 4 \end{array}$$

Work these problems on another paper.

1. Tom has 8 toy trucks. He wants to have 10 trucks. How many more trucks does he still need?

2. Bill wants to buy a ball that costs 13 cents. He has 8 cents now. How many more cents does he need?

3. Ann has 12 dresses to cut out for her paper dolls. She has cut out 5 of the dresses. How many more must she cut out?

4. Jill has 11 cups to wash. She has washed 3 of them. How many cups does she still have to wash?

5. Sam wants to buy his father a 25-cent birthday present. He has saved 12 cents. How many more cents does he need?

How Many Are Needed?

Work these problems on another paper.

1. Ellen wants 12 place cards for her party. She already has 6 of the cards. How many more does she need?

2. Mother asked Don to pick her a dozen tomatoes. Don has picked 7. How many more must he pick?

3. Thirteen guests are coming to our class play. We have only 6 chairs. How many more chairs do we need?

4. Joe is to practice his trumpet 25 minutes. He has already practiced 15 minutes. How many minutes more must he practice?

5. Jerry wants 13 stamps for one page of his stamp album. He has 7 stamps now. How many more stamps does he need?

6. Ann is looking for 11 fancy beads for a doll necklace. She has found 6 beads. How many more beads does she need?

7. Jean wants a dozen colored pencils for drawing. She has bought 4. How many more must she buy?

8. Nora's bookcase will hold 48 books. Nora has 35 books in the bookcase. How many more books does she need to fill the bookcase?

9. Bob has orders for 36 eggs. He has only 26 eggs now. How many more eggs does he need to fill the orders?

Why Do You Subtract?

You have found that you subtract to find **how many are left,** or **how many more or fewer,** or **how many are needed.**

Write the answers to these subtraction problems on another paper. In each problem, can you tell why you subtract?

1. There were 13 children in the bus. Then 4 children got out. How many were left in the bus?

2. Sue spent 12 cents. Bob spent 7 cents. How much more did Sue spend than Bob?

3. The lemonade for our picnic will take 18 lemons. We have only 9 lemons. How many lemons do we need?

4. Jean painted 10 pictures. She gave away 7 of them. How many pictures did she have left for her own room?

5. Ann wants a paper doll family of 11 dolls. She has 8 dolls now. How many more dolls does she need?

6. In a game of bean bag, Bob's score was 6. Don's score was 11. How many fewer points than Don did Bob make?

7. Ann had 13 pieces of candy. She gave Bill 5 of them. How many pieces of candy did Ann have left for herself?

8. Jill is 8 years old. Her sister Betty is 12 years old. How many years older than Jill is Betty?

Pages 256 and 257 provide enrichment material which can be used after this page.

Do You Remember Addition?

These addition examples will help you remember the addition you have had. Copy and add.

	a	b	c	d	e	f	g
1.	5 6	9 9	8 5	7 4	3 9	6 7	6 6
2.	4 8	9 4	7 5	7 7	3 8	9 2	8 8
3.	13 6	14 3	10 4	21 16	32 17	23 25	20 43
4.	54 25	32 25	86 13	42 26	55 31	30 40	55 40

Do You Remember Subtraction?

These subtraction examples will help you to remember subtraction. Copy and subtract.

1.	13 7	10 9	13 8	18 9	11 5	10 2	10 5
2.	11 3	16 8	13 6	12 6	10 4	13 5	13 9
3.	19 4	18 2	37 16	68 24	79 56	17 7	69 30
4.	48 20	66 51	85 30	76 46	89 15	48 46	79 32

Ann's Paper Dolls

Ann has 14 clown paper dolls. She has promised to lend some of them for a toy circus at school. She wants to keep some of the clowns for her circus at home. The problems below show how Ann can divide her dolls.

For each problem, draw on another paper the dolls Ann takes to school and the dolls she leaves at home. Write all the answers on your paper.

1. Suppose Ann takes 7 dolls to school and leaves the rest at home. $14 - 7 = ?$ $7 + ? = 14$

2. Suppose Ann takes 5 dolls to school.
$14 - 5 = ?$ $5 + ? = 14$ $? + 5 = 14$ $14 - ? = 5$

3. If Ann takes 6 dolls, how many are left home?
$14 - 6 = ?$ $6 + ? = 14$ $? + 6 = 14$ $14 - ? = 6$

4. Suppose Ann takes 8 dolls to school.
$14 - 8 = ?$ $8 + ? = 14$ $? + 8 = 14$ $14 - ? = 8$

5. Suppose Ann takes 9 of her dolls.
$14 - 9 = ?$ $9 + ? = 14$ $? + 9 = 14$ $14 - ? = 9$

New Addition Facts				New Subtraction Facts			
9	8	6	5	14	14	14	14
5	6	8	9	5	6	8	9
14	14	14	14	9	8	6	5

Can You Find the Other Number?

Write the answers to these subtraction problems on another piece of paper.

1. Bill threw 11 snowballs at a tree. Only 5 hit the tree. How many snowballs missed the tree?

2. The class was having a play. Dave took 10 tickets to sell. He brought back 3 tickets. How many tickets did Dave sell?

3. There were 9 candles on Ellen's birthday cake. She tried to blow them all out, but 2 candles were left burning. How many had she blown out?

4. Don took 12 apples to a picnic. After the picnic there were 3 apples left to take home. How many apples had been eaten?

5. Peggy had 11 cents. After she bought some jacks, she had 4 cents left. How much did the jacks cost?

6. Eleven children are working to make a playhouse. Two of the children are girls. How many boys are working on the playhouse?

7. Bill is playing a game of 10 pins. After he rolled the ball, one of the 10 pins was left standing. How many pins had Bill knocked down?

8. Fourteen children are on the playground. Eight are playing tag. How many are not playing tag?

9. Ellen bought some candy. She gave the clerk a dime and got 3 cents change. How much did the candy cost?

Finding the Missing Number

1. In the addition example $5 + ? = 13$, the missing number is 8. What number is missing in $8 + ? = 10$?

2. What number must you add to 2 to make 10?

Write the missing numbers for these examples.

	a	*b*
3.	5 and ? are 10	8 and ? are 12
4.	7 and ? are 12	9 and ? are 18
5.	6 and ? are 11	6 and ? are 13
6.	7 and ? are 14	7 and ? are 11
7.	8 and ? are 14	3 and ? are 12
8.	$4 + ? = 11$	$7 + ? = 10$

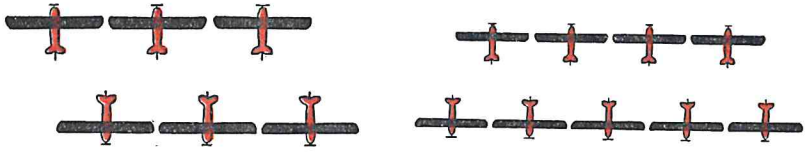
On your paper, write the missing numbers in these addition examples.

	a	*b*	*c*	*d*	*e*	*f*
9.	6 + ? = 10	8 + ? = 11	8 + ? = 16	3 + ? = 11	8 + ? = 13	6 + ? = 12
10.	9 + ? = 11	3 + ? = 10	4 + ? = 13	4 + ? = 10	2 + ? = 11	1 + ? = 10

11.	$12 = 4 + ?$	**16.**	$13 = 7 + ?$
12.	$12 = 9 + ?$	**17.**	$14 = 5 + ?$
13.	$12 = 5 + ?$	**18.**	$14 = 9 + ?$
14.	$13 = 6 + ?$	**19.**	$14 = 6 + ?$
15.	$13 = 9 + ?$	**20.**	$14 = 3 + ?$

Bill's Toy Airplanes

Bill wants 15 toy airplanes. He wants some big ones and some little ones. He is trying to decide how many big ones and how many little ones to buy.



1. The picture shows how many little planes Bill can have if he buys 6 big planes. On another paper write the answers.

$15 - 6 = ?$ $6 + ? = 15$ $? + 6 = 15$ $15 - ? = 6$

For each of the problems below, draw the planes and write the answers on your paper.

2. Suppose Bill buys 7 big planes and the rest little planes.

$15 - 7 = ?$ $7 + ? = 15$ $? + 7 = 15$ $15 - ? = 7$

3. If Bill gets 8 big planes, find how many little ones he can have.

$15 - 8 = ?$ $8 + ? = 15$ $? + 8 = 15$ $15 - ? = 8$

4. Suppose Bill buys 9 big planes.

$15 - 9 = ?$ $9 + ? = 15$ $? + 9 = 15$ $15 - ? = 9$

New Addition Facts				New Subtraction Facts			
9	8	7	6	15	15	15	15
6	7	8	9	6	7	8	9
15	15	15	15	9	8	7	6

Comparing Numbers

In these problems you use subtraction to compare numbers. In the first problem, you compare the heights of Ann's dolls. Tell what you compare in each of the other problems. Then write the answers to the problems on another paper.

1. One of Ann's dolls is 15 inches tall. Another doll is 9 inches tall. How much taller is the larger doll?

2. Jean is 8 years old. Her brother Tony is 13 years old. How many years younger than Tony is Jean?

3. Sue weighs 62 pounds. Bob weighs 76 pounds. How many more pounds does Bob weigh than Sue?

4. Bob's father raised 92 turkeys and 80 ducks. How many more turkeys than ducks did he raise?

5. Sam is 50 inches tall. His father is 72 inches tall. How much taller than Sam is his father?

6. Dick bought a white "T" shirt for 70¢ and a blue "T" shirt for 85¢. How much more did the blue one cost?

7. Ann caught a ball 15 times without missing. Jean caught it 7 times. How many more times did Ann catch it?

8. Jill lives 15 miles from town. Sam lives 7 miles from town. How much farther from town than Sam does Jill live?

9. Bill's father is 39 years old. Bill is 9 years old. How much older than Bill is his father?

Facts That Belong Together

1. With the numbers 9, 5, and 14 you can make four addition and subtraction facts that belong together.
$9 + 5 = 14$ $5 + 9 = 14$ $14 - 5 = 9$ $14 - 9 = 5$

On your paper, write two addition facts that belong together, using the numbers 7, 3, and 10.

2. Write two subtraction facts using 12, 8, and 4.

3. Write four addition and subtraction facts that belong together using 4, 6, and 10.

4. Write four number facts using 8, 5, and 13.

Write a set of four number facts for each of these groups of numbers.

5. 6, 3, 9
6. 6, 7, 13
7. 9, 2, 11
8. 15, 8, 7
9. 5, 6, 11
10. 7, 5, 12

More or Less?

You will need addition and subtraction facts to answer these questions.

1. Which is more, $5 + 2$ or $4 + 4$?
2. Which is more, $6 + 8$ or $7 + 5$?
3. Which is less, $7 + 7$ or $9 + 6$?
4. Is $4 + 9$ more or less than $6 + 6$?
5. Which is more, $14 - 5$ or $8 + 2$?
6. Which is less, $12 - 4$ or $5 + 4$?
7. Is $13 - 8$ more or less than $3 + 3$?

Don's Apples

1. Don lives on a fruit farm. He brought 7 red apples and 9 yellow apples to school.

Draw Don's apples to find how many apples he brought.

Write these answers on your paper: $7 + 9 = ?$ $9 + 7 = ?$

2. Jill also brought some apples. She brought 9 apples. How many fewer apples did she bring than Don? $16 - 9 = ?$

3. The children ate 7 of Don's apples. How many apples were left for the next day? $16 - 7 = ?$

4. Another day, Don had 9 red apples and 8 yellow apples. Draw and color the apples. How many apples did Don bring? $9 + 8 = ?$ $8 + 9 = ?$

5. Don wanted to divide these apples between morning and afternoon. If the children ate 9 of the 17 apples in the mid-morning lunch, how many apples would be left for afternoon? $17 - 9 = ?$

6. If the children ate 8 apples in the morning, how many would be left for afternoon? $17 - 8 = ?$

New Addition Facts				New Subtraction Facts			
9	7	9	8	16	16	17	17
7	9	8	9	7	9	8	9
16	16	17	17	9	7	9	8

Do You Know Addition Facts?

You have now had all the addition facts. This page will show you whether you have learned them.

Write the sums on another paper. Check any answers you have trouble with and study the examples until you know them.

	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*
1.	4 6	3 5	3 9	2 2	9 5	3 4	5 2	4 7	7 7
2.	5 2	2 9	7 1	9 3	4 4	1 1	4 3	3 6	4 8
3.	4 2	5 3	3 7	4 1	2 8	6 2	8 6	3 3	1 5
4.	7 6	2 5	6 6	1 6	8 8	8 4	1 7	5 5	9 7
5.	5 4	8 1	7 5	1 4	8 2	6 1	7 2	5 6	9 2
6.	2 4	6 4	3 1	7 3	6 7	4 5	5 8	1 2	9 4
7.	3 2	1 9	9 4	6 5	2 1	8 7	1 8	5 7	8 9
8.	5 9	1 3	7 9	6 3	9 9	2 3	7 4	8 5	9 6
9.	8 3	6 8	9 8	6 9	2 6	3 8	4 9	2 7	8 7

Do You Know Subtraction Facts?

You have now had all the subtraction facts, too. This page will show you whether you know them.

Write the answers on another paper. Study any examples that you have trouble with.

	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*
1.	9 5	17 8	7 4	13 5	9 3	12 9	8 6	16 8
2.	14 5	8 3	9 7	11 3	15 9	10 3	9 8	6 4
3.	16 7	12 3	9 4	11 9	13 8	10 1	11 4	14 6
4.	9 6	12 6	7 2	10 2	11 8	8 4	15 7	17 9
5.	10 8	12 4	9 2	16 9	10 7	8 5	14 7	13 9
6.	7 3	10 4	14 8	10 9	8 2	15 8	10 6	14 9
7.	11 5	7 5	13 6	12 5	13 7	6 3	18 9	12 8
8.	13 4	15 6	11 2	6 6	12 7	8 1	11 7	7 6
9.	11 6	8 8	9 1	14 6	6 2	15 7	5 3	8 7

Pages 258 and 259 provide enrichment material which can be used after this page.

Why Do You Add?

1. Jean likes to draw animals. Last month she drew 8 pictures of her cat Jiggs. She drew 5 pictures of Ann's dog Spot. How many pictures of both did she draw?

In this problem you add to find how many pictures of both pets Jean drew. $8 + 5 = ?$ Write the answer on another paper.

For each of these problems tell why you add and what numbers you add. Write the answers on your paper.

2. Tom has 5 large trucks and 9 small trucks. How many trucks does he have?

3. Nine children were at a picnic. Then 6 more came. How many children were at the picnic then?

4. At her party, Ellen hid some candies for the children to find. Bill found 8. Ann found 6. How many candies did both children find in all?

5. There were 6 gray cats and 5 yellow cats at our pet show. How many cats were there in all?

Do You Add or Subtract?

Tell whether you add or subtract in each problem. Write the answers on another paper.

1. Bill has 7 cents. His father will give him a nickel for helping to rake the yard. How many cents will Bill have then?

2. Dave has 9 toy airplanes. Jim has 9 toy airplanes too. How many airplanes do the two boys have together?

3. Sally had a dime. She spent 6 cents for candy. How many cents did she have left?

4. Peggy spent 6 cents for a ball and 9 cents for jacks. How much money did she spend?

5. Bill has 8 blue marbles and 5 yellow marbles. How many more blue marbles than yellow marbles does he have?

6. Ann has 7 paper dolls at home. She has 9 at school. How many does she have altogether?

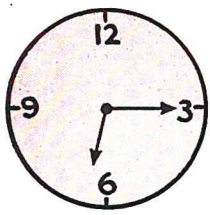
7. Bob's mother asked him for a dozen eggs. Bob had only 9 eggs. How many more eggs did Bob need?

8. Tom is 9 years old. His little sister is 3 years old. How much younger is his sister?

9. Before her birthday, Nora had 8 books. She got 4 more for her birthday. How many did she have then?

10. Jill's dog weighs 10 pounds. Her cat weighs 8 pounds. Which animal is heavier? How much?

Can You Tell Time?

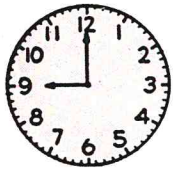


1. This clock face is divided into **fourths.** A fourth of something is often called a **quarter.**

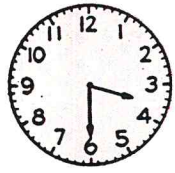
When the long hand points to 3, it is a quarter **after** the hour.

When the long hand points to 9, it is a quarter **of** the hour.

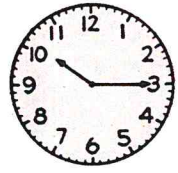
This clock says a quarter after what hour?



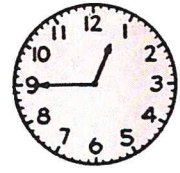
A



B



C

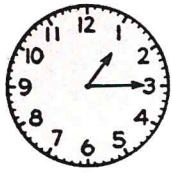


D

2. Look at the clocks above. Which clock says quarter past 10? 9 o'clock? Quarter of 1? Half past 3?

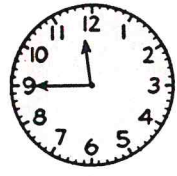
On another paper, write the time that is told by each clock below.

3.

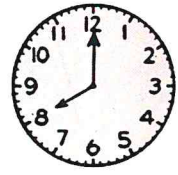


4.

5.



6.



On your paper, draw clocks to show:

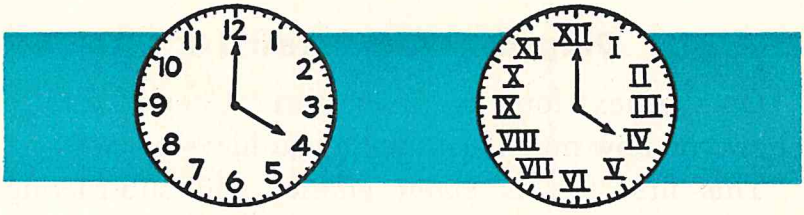
7. Three o'clock

8. Quarter of 5

9. Half past 11

10. Quarter past 9

Roman Numbers



Look at the two clocks above. The clock at the left is marked with our numbers. The clock at the right is marked with Roman numbers.

The Romans were people who lived many years ago. They used letters to make numbers. What three letters did they use to make the numbers through twelve? The clock will show you.

1. Roman IV means 4. What does Roman V mean? What does Roman X mean?

2. On another paper, write the Roman numbers from I to XII. You can find them on the clock.

Write our numbers for these Roman numbers:

	a	*b*	*c*	*d*	*e*	*f*
3.	VI	VIII	I	V	XI	III
4.	IV	X	VII	II	XII	IX

5. Which is more, VIII or X?

6. Which is smaller, IV or VI?

7. What Roman number comes just before X?

8. What Roman number comes just after IV?

9. What Roman number comes between IX and XI?

Pages 260 and 261 provide enrichment material which can be used after this page.

Can You Handle Numbers?

Diagnostic Check Test 1A

On the next four pages are three Check Tests to show you how much arithmetic you have learned.

This first test is about adding and subtracting numbers. Write the answers on another paper.

	a	*b*	*c*
1.	$4 + 3 = ?$	$6 + 4 = ?$	$8 + 3 = ?$
2.	$7 + 6 = ?$	$5 + 9 = ?$	$9 + 8 = ?$
3.	$9 - 2 = ?$	$8 - 8 = ?$	$10 - 1 = ?$
4.	$12 - 5 = ?$	$15 - 6 = ?$	$17 - 9 = ?$

Copy and add.

	a	*b*	*c*	*d*	*e*	*f*
5.	12 3	24 5	3 34	41 48	50 23	30 60
6.	14 22	53 15	22 75	36 31	45 30	23 34
7.	2 7 6	3 1 8	5 3 9	6 3 7	2 4 5	8 7 2

Copy and subtract.

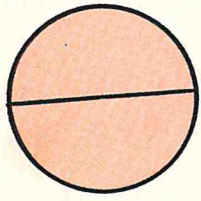
8.	18 3	15 5	39 7	90 30	69 45	36 32
9.	61 20	78 27	49 12	86 56	95 64	87 24

Do You Understand Numbers?

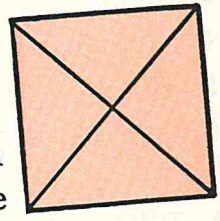
Diagnostic Check Test 1B

This test will show you how much you know about the meaning of numbers and arithmetic words. Write your answers on another paper.

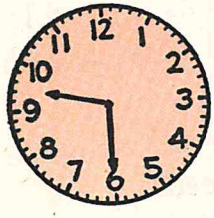
1. Write the number that comes between 19 and 21.
2. What number comes just before 11?
3. What number comes just after 29?
4. Write the number that is 3 more than 9.
5. Write the number that is 4 less than 17.
6. Write the two subtraction facts that belong with $9 + 4 = 13$.
7. Write the other addition fact that belongs with $7 + 9 = 16$.
8. $32¢$ means how many dimes and how many cents?
9. 48 means how many tens and how many ones?



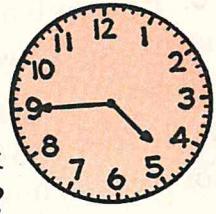
10. Copy on your paper the circle on the left. Color $\frac{1}{2}$ of the circle red.



11. Copy the square on the right. Color $\frac{3}{4}$ of the square blue.



12. The clock at the left says half past what?



13. The other clock says quarter of what?

Using Addition and Subtraction

Diagnostic Check Test 1C

The test on these two pages will show you how much you have learned about using addition and subtraction in problems. Do you know when to add and when to subtract? Think *why* you add or subtract. Write your answers on another paper.

1. Ann has 6 red lights, 3 green lights, and 4 blue lights for the Christmas tree. How many lights has she in all?

2. Jean wants to buy a paintbox that costs 68 cents. She has saved 50 cents so far. How much more money does she need to save?

3. Our dog weighs 17 pounds. Our cat weighs only 8 pounds. How many pounds lighter in weight is our cat than our dog?

4. Ann and Jean are playing with their paper dolls. Ann has 7 dolls and Jean has 6 dolls. How many dolls are the girls playing with?

5. Sue bought some candy costing 6 cents. She gave the clerk a dime. How much change should he give her?

6. Bill has 8 marbles in his pocket. He has 21 marbles at home. How many marbles does Bill have in both places?

7. If Ann buys a sandwich for 8 cents and an apple for 5 cents, how much money will she need?

8. Ellen has 75 cents. If she spends 50 cents for candy for her party, how much money will she have left?

9. Joe wants to practice his trumpet lesson for 18 minutes. He has already practiced for 8 minutes. How many more minutes must he practice?

10. Jill helped her mother 15 minutes this morning and 20 minutes this afternoon. How many minutes has she helped today?

11. Bob's hens have laid a dozen white eggs and a dozen brown eggs. How many eggs does Bob have?

12. We took 38 sandwiches to our picnic. We brought 6 sandwiches back home. How many of the sandwiches did we eat at the picnic?

13. Sue and her mother made 8 glasses of apple jelly. They made 6 glasses of grape jelly. How many glasses of jelly did they make?

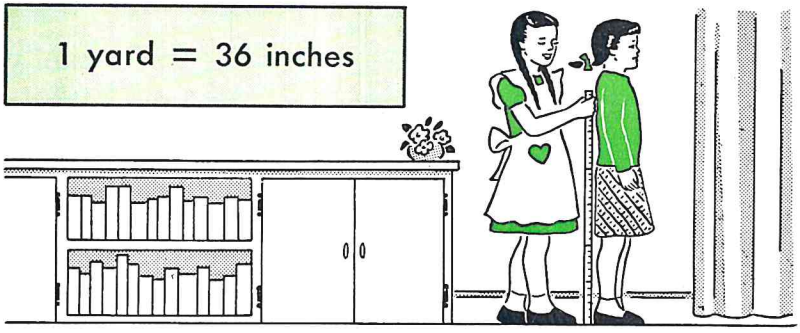
14. Nora's book has 96 pages. She has read 83 pages. How many pages does she have left to read?

15. Bill paid 12 cents for some marbles and 25 cents for a ball. How much more did the ball cost than the marbles?

16. Peggy weighs 63 pounds. Her pet dog weighs 16 pounds. How many pounds do Peggy and her dog weigh together?

Can You Use a Yardstick?

1 yard = 36 inches



36 in.
11 in.
47 in.

1. Jean is measuring Ann's height. Jean has a yardstick. The yardstick is 36 inches long. Jean measures 36 inches first, and then 11 inches above that. To find how tall Ann is, add 36 and 11. Ann is 47 inches tall. (The abbreviation "in." means "inches.")

2. Then Ann measures Jean's height with the yardstick. Jean is 1 yard and 13 inches tall. How many inches tall is Jean?

48 in.
36 in.
12 in.

3. Bob measures Don's height. Don is 48 inches tall. How many inches taller than a yard is Don? A yard is 36 inches, so you must subtract 36 from 48. Don is 12 inches more than a yard tall.

4. Sam is 46 inches tall. How many inches taller than a yard is Sam?

5. Sam's older brother is 57 inches tall. How many inches more than a yard is this?

Can You Use a One-Foot Ruler?

1 foot = 12 inches	3 feet = 1 yard

12 in.
12 in.
12 in.
36 in.

1. Tom has a one-foot ruler. It is 12 inches long. Tom uses it to measure the height of his little sister Mary. Mary is just 3 feet tall. How many inches is this?

To find out, you must add 12 and 12 and 12. First you add the 2's in the ones place. Then you add the 1's in the tens place. In adding, always add the right-hand column (the ones) first. Mary is 36 inches tall.

2. Barbara measured her play table with a ruler. The table was 1 foot and 7 inches wide. How many inches wide was it? 12 + 7 = ?

3. On your paper, draw a line you think is 6 inches long. (Don't use a ruler.) Now measure the line to see how close you came.

Adding Numbers in Columns

Add these numbers. Add the right-hand column first.

	a	*b*	*c*	*d*	e	*f*	*g*
1.	23	14	25	25	53	14	31
	65	30	20	14	24	45	42
	11	14	31	20	20	10	11
2.	12	36	21	31	21	36	13
	20	33	36	20	44	2	76
	5	10	21	35	2	30	10

Jerry's Stamps

This is Jerry.

1. Jerry has a small book for the stamps he trades. He has 90 stamps in this book and 20 more stamps to put in.

To find the number of stamps he will have in all, add 20 and 90.

90 is 9 tens. 20 is 2 tens. 9 tens and 2 tens are 11 tens. 11 tens make 1 hundred with 1 ten left over. The answer, then, is 110.

	tens	ones
	9	0
+	2	0
	11	0

2. On another paper, write a table of numbers from 101 to 130. The first line will be

101, 102, 103, 104, 105, 106, 107, 108, 109, 110

Start the next line with 111.

3. Can you count by 10's from 100 to 200? On your paper write these 10's. Start with 100, 110, 120.

4. 138 means 1 hundred, 3 tens, 8 ones. What does 150 mean?

On your paper, write the number that means

5. 1 hundred 4 tens 6 ones

6. 1 hundred 0 tens 9 ones

7. 1 hundred 7 tens 0 ones

8. One hundred one

9. 1 hundred fifteen

10. One hundred fifty

Adding Larger Numbers

1. One week Bob's hens laid 48 eggs. The next week they laid 61 eggs. To find how many eggs Bob got in both weeks, add 61 and 48. You add the ones column first, then add the tens. How many eggs did Bob get in all?

hundreds	tens	ones
	4	8
	6	1
1	0	9

Add. Write the sums on another paper.

	a	*b*	*c*	*d*	*e*	*f*
2.	76 82	50 57	42 85	60 92	84 34	71 55
3.	91 47	81 48	57 80	61 66	63 40	10 49
4.	43 66	20 84	72 47	30 95	90 40	53 74
5.	70 61	65 74	22 43	34 85	80 63	62 86
6.	44 83	56 82	75 82	90 85	74 52	91 78
7.	66 73	93 42	70 92	83 95	73 63	84 65
8.	92 54	64 84	86 50	52 92	94 60	85 73
9.	45 90	80 80	92 37	76 73	93 94	74 35

Jill's Flowers

When you **subtract** to find **how many are left,** the answer is called the **remainder.**

1. In the summer, Jill's family raises flowers. Jill helps her mother tie the flowers in bunches of 10. One day there were 124 flowers. These made 12 bunches with 4 flowers extra.

A man bought 5 bunches. Five bunches were 5 tens, or 50 flowers. To find how many flowers were left to sell, subtract 50 from 124.

	tens	ones
1	2	4
	5	0
	7	4

You first subtract 0 ones from 4 ones. Then you subtract 5 tens from the 12 tens. (1 hundred and 2 tens are the same as 12 tens.)

How many flowers were left?

Before you subtract the larger numbers on the next page, brush up on these subtraction facts. Write the remainders on a paper.

	a	*b*	*c*	*d*	*e*	*f*	*g*
2.	16 − 9	15 − 6	11 − 4	10 − 3	12 − 5	17 − 8	14 − 7
3.	14 − 5	13 − 6	15 − 8	13 − 4	18 − 9	13 − 7	12 − 3

4. How many of these examples have the answer 9?

5. How many examples have the answer 7?

Subtracting Larger Numbers

Write the remainders on another paper.

	a	b	c	d	e	f
1.	137 − 64	74 − 12	176 − 90	125 − 84	97 − 90	159 − 90
2.	84 − 13	105 − 31	101 − 21	93 − 32	176 − 81	76 − 53
3.	105 − 12	76 − 66	168 − 90	162 − 72	85 − 23	123 − 91
4.	114 − 64	64 − 41	152 − 81	118 − 98	109 − 41	79 − 75

Using Subtraction

Tell why you subtract in each problem. Work the problems on your paper.

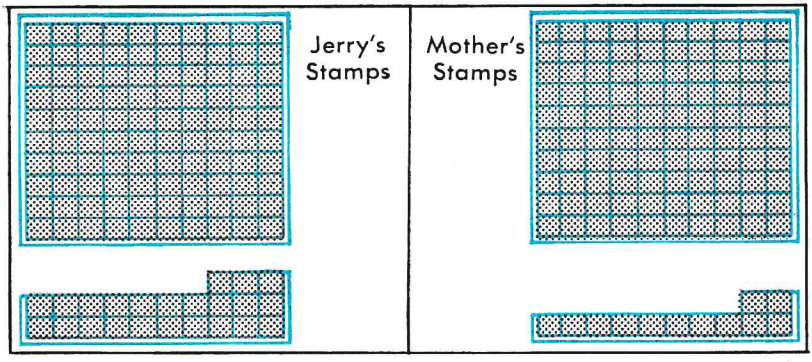
1. One of Nora's books has 159 pages. Another book has 96 pages. How many more pages has the first book than the second book?

2. The Lane family have started on a 130-mile trip in their car. They have gone 70 miles. How many miles have they still to go?

3. Don and his father picked 108 boxes of strawberries. They have sold 80 boxes. How many boxes are left?

4. Bill weighs 78 pounds. His father weighs 158 pounds. How many pounds lighter is Bill?

Adding Hundreds



1. Jerry is helping his mother put stamps on letters she is mailing for her club.

hundreds	tens	ones
1	2	3
1	1	2
2	3	5

Jerry still has 123 stamps to put on letters. His mother has 112 stamps. To find how many stamps they both have, add 123 and 112.

First add the ones column, then the tens, then the hundreds. How many stamps do they both have left to put on?

Work these addition examples on your paper.

	a	b	c	d	e
2.	346 512	431 65	355 124	115 430	34 124
3.	207 341	350 410	870 126	600 100	23 913
4.	241 535	42 820	528 360	231 200	421 517

In adding, always start with the ones column.

Subtracting Hundreds

1. Jean collects picture cards. She has 249 cards in her collection. Ellen collects cards too. She has 207 cards. To find how many more cards Jean has, subtract 207 from 249.

hundreds	tens	ones
2	4	9
2	0	7
	4	2

First subtract 7 from 9 in the ones column. Then subtract 0 from 4 in the tens column. Then subtract 2 from 2 in the hundreds column.

Jean has how many more cards than Ellen?

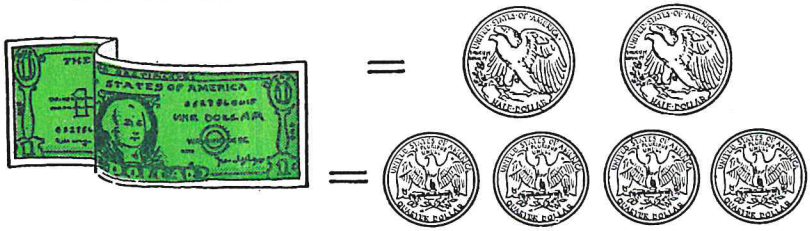
Copy the examples below and subtract.

	a	b	c	d	e
2.	756 542	268 258	129 32	648 443	967 766
3.	548 22	854 120	908 105	728 107	637 300
4.	972 822	376 370	247 117	986 641	987 360

In subtracting, always start with the ones column.

Parts of a Dollar

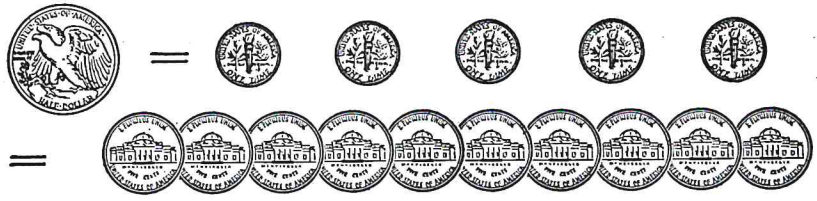
A dollar = 100¢. A quarter = 25¢.



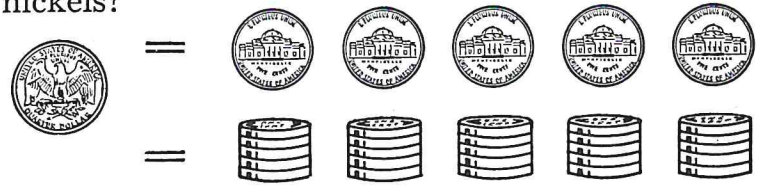
Look at the pictures above of the dollar, half-dollars, and quarters.

1. A dollar will buy as much as how many half dollars?

2. A dollar is worth as much as how many quarters?



3. A half dollar is worth how many dimes? How many nickels?

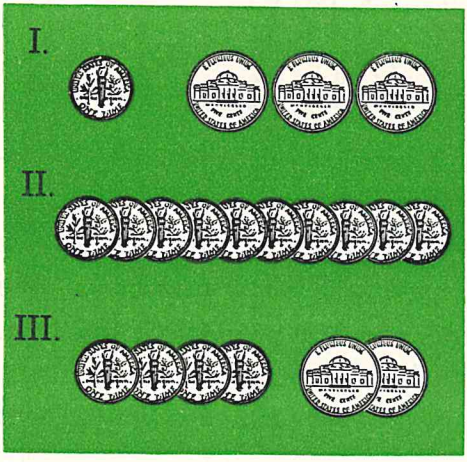


4. A quarter is worth how many nickels?

5. A quarter is worth how many cents?

What Do You Know About Coins?

1. How much money does the picture at the right show? It is worth as much as what one coin?



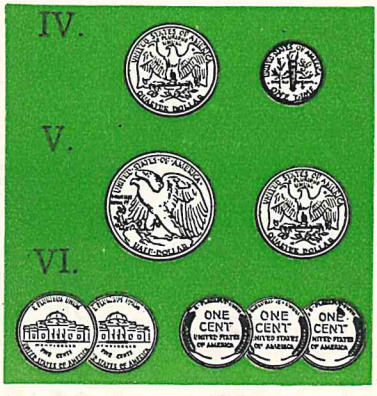
Look at the three pictures of coins at the left.

2. Which picture shows just as much money as a dollar?

3. Which picture shows just as much money as a quarter?

4. Which picture shows as much money as a half dollar?

Look at the three pictures of coins at the right.



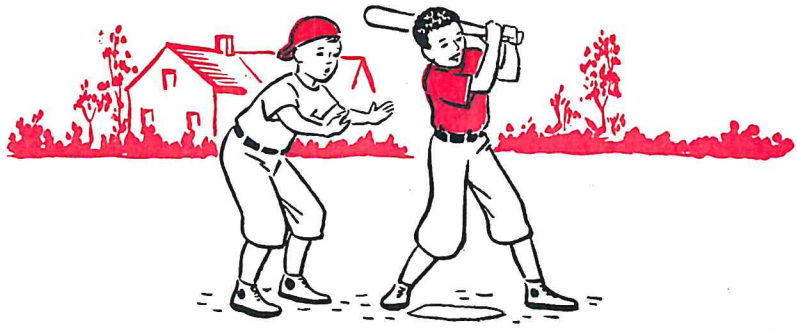
5. How many cents are the coins in Picture IV worth?

6. How many cents does Picture V show?

7. How many cents does Picture VI show?

8. How many cents are a dime and a nickel worth?

Adding Dollars and Cents



1. Bill is saving to buy a baseball for 90¢ and a baseball cap for 75¢.

\$ .90
.75
\$1.65

To find how much money Bill needs, you add just as you add other numbers. See how 90¢ and 75¢ are written in the box. \$1.65 means 1 dollar and 65 cents.

The point is always used to separate the cents from the dollars.

2. On a paper write 68 cents with the dollar sign and point.

3. On your paper add 36¢ and 92¢. Use the dollar signs and points.

Copy these money numbers and find the sums.

	a	*b*	*c*	*d*	*e*
4.	\$ .94 .25	\$ .53 .64	\$ .84 .54	\$ .75 .80	\$ .60 .94
5.	\$ .51 .58	\$ .93 .05	\$ .80 .70	\$ .72 .66	\$ .93 .83

Adding Money Numbers

1. Jill's oldest sister, Kay, had $3.08. Then she earned a dollar taking care of a neighbor's baby.

To find how much Kay had then, add a dollar to $3.08. See how the 1 dollar is written. How much money did Kay have in all?

$$\begin{array}{r} \$3.08 \\ 1.00 \\ \hline \$4.08 \end{array}$$

2. $4.08 is read, "Four dollars and 8 cents." How do you read $3.05? $7.50?

Read these money numbers.

	a	b	c	d	e
3.	$2.75	$2.20	$1.08	$6.37	$3.19
4.	$4.00	$ .09	$5.12	$4.71	$9.99

5. On your paper, write 3 dollars and 5 cents with the dollar sign and point. Write 5 dollars.

Copy and add. Remember the dollar sign and point.

6.	$7.10 .39	$2.00 2.80	$2.44 5.20	$2.10 4.86	$1.16 2.60
7.	$1.35 .43	$ .61 2.14	$4.15 3.70	$1.03 1.12	$8.04 .74
8.	$3.20 4.18	$2.15 3.52	$4.23 1.00	$9.08 .51	$7.30 1.13
9.	$7.30 2.62	$5.07 2.02	$5.20 1.14	$7.41 .58	$1.25 .63
10.	$5.07 4.50	$5.00 2.95	$2.35 .41	$1.62 6.05	$3.50 3.25

Subtracting Dollars and Cents

\$4.89
2.25
\$2.64

1. Ann wants to buy a doll buggy costing \$4.89. She has saved \$2.25. How much does she still need?

To find out, subtract as you always subtract. Use the dollar sign and the point.

Copy these examples and subtract.

	a	*b*	*c*	*d*
2.	\$3.97 1.45	\$4.68 2.21	\$9.84 3.13	\$8.75 5.22
3.	\$4.18 2.00	\$6.89 4.82	\$5.75 5.25	\$7.86 5.35
4.	\$2.58 2.14	\$8.95 6.30	\$9.37 6.36	\$3.80 2.20
5.	\$9.57 7.44	\$6.16 3.12	\$7.65 7.05	\$5.98 1.40
6.	\$6.57 4.30	\$9.29 7.25	\$8.75 7.40	\$7.79 2.59

Subtracting Money Numbers

1. Bob has sold some eggs for $1.25. If he spends 90 cents of this for baby chicks, how much will he have left?

$1.25
.90
$ .35

This subtraction is like the subtraction on page 73. First you subtract the ones (the cents): 5 — 0 = 5. Then you take 9 tens from 12 tens (dimes). The point in $1.25 does not keep you from subtracting 9 from 12. You work the example just as if you were taking 90 from 125. How much money will Bob have left?

Copy these examples and subtract. Remember to put the point and the dollar sign in each answer.

	a	*b*	*c*	*d*
2.	$1.47 .51	$1.06 .11	$1.07 .40	$1.64 .74
3.	$1.15 .43	$1.29 .44	$1.14 .50	$1.07 .53
4.	$2.85 .60	$1.36 .52	$1.03 .20	$1.60 .80

Copy each example below in columns and subtract:

	a	*b*	*c*
5.	$1.14 — $.31	$1.25 — $.50	$1.18 — $.21
6.	$1.33 — 41¢	$4.86 — 3 dollars	$1.59 — 25¢

Pages 262 and 263 provide enrichment material which can be used after this page.

Adding by Endings

11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1. Look at this number table from 11 to 100. You can see that 20 is 5 more than 15. What number is 5 more than 25? 5 more than 45? 5 more than 85?

2. When 5 is added to a number ending in the figure 5, the sum always ends in what figure?

3. What number is 8 more than 13? 8 more than 53? 8 more than 73? 8 more than 33?

4. When 8 is added to a number ending in 3, the sum always ends in what figure?

Copy these examples and add.

	a	b	c	d	e	f	g
5.	35 5	65 5	55 5	23 8	83 8	43 8	63 8

More Adding by Endings

1. Look again at the number table on page 82. What number is 7 more than 15? 7 more than 75? 7 more than 55? These sums all end in what figure?

2. What number is 8 more than 17? 8 more than 37? 8 more than 67? When 8 is added to a number ending in 7, the sum always ends in what figure?

3. What number is 9 more than 14? 9 more than 54? 9 more than 84? 9 more than 44? These sums all end in what figure?

4. What number is 7 more than 3? 7 more than 13? 7 more than 73? 7 more than 63? When 7 is added to a number ending in 3, in what figure does the sum always end?

5. What number is 9 more than 8? 9 more than 18? 9 more than 88? When 9 is added to a number ending in 8, the sum always ends in what figure?

Copy the examples below and write the sums.

	a	b	c	d	e	f	g
6.	25 + 7 =	65 + 7 =	58 + 9 =	83 + 7 =	48 + 9 =	33 + 7 =	77 + 8 =
7.	78 + 9 =	27 + 8 =	53 + 7 =	34 + 9 =	73 + 8 =	68 + 9 =	57 + 8 =
8.	64 + 9 =	45 + 7 =	85 + 5 =	38 + 9 =	24 + 9 =	35 + 7 =	47 + 8 =

Practice in Adding by Endings

1. Copy this table on another paper.

15	45	85	25	75	35	65	55

Add 9 to each of these numbers. On your paper, write the sums in the spaces under the numbers.

2. Copy the table below on your paper.

37	67	87	47	27	77	17	57

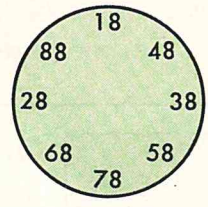
Add 7 to each of these numbers. On your paper, write the sums in the spaces under the numbers.

Copy the examples below and add.

	a	b	c	d	e	f	g
3.	45 + 9	87 + 7	23 + 7	67 + 8	35 + 9	65 + 5	53 + 8
4.	23 + 8	74 + 9	43 + 8	85 + 7	24 + 9	68 + 9	43 + 7
5.	35 + 5	87 + 8	64 + 9	37 + 7	18 + 9	25 + 9	55 + 7
6.	17 + 7	53 + 7	47 + 8	58 + 9	45 + 5	78 + 9	25 + 7

More Practice in Adding by Endings

1. Copy on another paper the circle at the right. Add 5 to each of the numbers in the circle. Write the sums outside the circle.



In what figure do all the sums end?

Copy the examples below and add. When you do not know an ending, look back at the table on page 82. Watch the tens figure in the sum.

	a	b	c	d	e	f	g
2.	37 4	48 5	85 8	65 6	49 2	72 8	66 4
3.	39 5	16 6	58 6	42 7	46 9	68 8	54 6
4.	79 9	27 4	42 9	59 3	66 8	74 5	23 9
5.	49 6	73 7	18 8	47 9	36 6	81 9	28 2
6.	77 5	45 8	44 3	59 7	38 5	17 7	48 6
7.	64 5	19 9	57 8	29 5	46 8	88 4	39 7
8.	39 8	48 7	24 8	39 4	16 7	36 5	24 7

Pages 264 and 265 provide enrichment material which can be used after this page.

Adding Three Numbers

To check addition, add in the other direction.

a	*b*
5¢	9¢
8¢	8¢
9¢	5¢
22¢	22¢

1. Jean spent 5 cents for an eraser, 8 cents for some drawing paper, and 9 cents for a drawing pencil.

To find the total cost, Jean wrote the numbers as shown under *a*. She added the column **down.** She thought "13." Then she added 9 to 13, and got 22.

Then Jean wrote the numbers a different way, as shown under *b*. This time she thought "17" and then added 5 to 17. She got the same sum, so she was pretty sure her answer was correct.

In the examples below, the numbers to be added have been written twice. Copy the examples. Add the *a* column **down.** Add the *b* column **up.** The answers should be the same. This is called **checking** (or proving) your work.

	a	*b*
2.	7	7
	4	4
	5	5

	a	*b*
3.	3	3
	9	9
	6	6

	a	*b*
4.	6	6
	8	8
	5	5

	a	*b*
5.	3	3
	4	4
	8	8

	a	*b*
6.	9	9
	9	9
	8	8

	a	*b*
7.	6	6
	9	9
	8	8

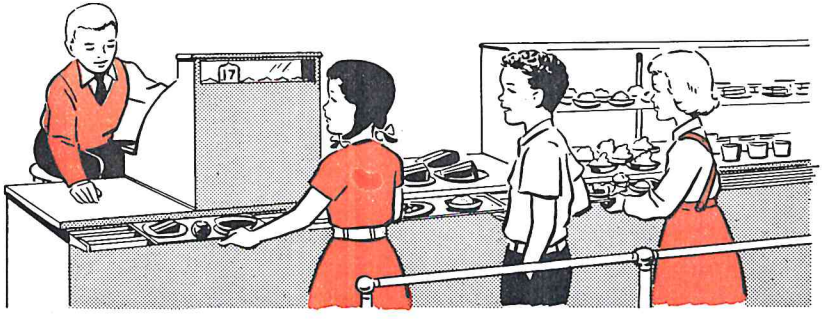
Checking Column Addition

To check column addition, you do not have to write the numbers again. Just add **down** to get your answer. Then add **up,** starting at the bottom. If you don't get the same answer both times, go over your work and find where you made your mistake.

Copy the examples below. Add down, then check your work by adding up.

	a	*b*	*c*	*d*	*e*	*f*	*g*
1.	2	1	4	5	2	3	1
	5	3	1	1	4	6	7
	4	9	6	3	6	5	8
2.	3	6	5	4	6	4	6
	4	2	5	2	4	8	6
	7	3	5	7	4	4	6
3.	4	5	3	8	3	2	7
	2	2	4	8	7	5	4
	6	5	2	8	6	3	6
4.	5	7	7	2	2	7	4
	1	7	8	4	7	9	4
	3	7	7	9	2	1	5
5.	6	8	9	5	5	4	8
	9	7	9	4	2	9	6
	5	6	9	3	9	5	6
6.	2	6	3	4	8	9	7
	8	5	9	6	7	8	7
	9	7	9	3	9	6	5

Buying Lunch at School



Apple	4¢	Ice Cream	8¢	Roll	3¢
Cake	5¢	Meat	9¢	Salad	9¢
Carrots	6¢	Milk	5¢	Sandwich	7¢
Custard	7¢	Potatoes	6¢	Soup	8¢

The list above shows the prices of some foods in the lunch room of Ann's school. Use these prices in working the problems on this page and page 89. Do your work on another paper. Be sure to check each problem.

1. Ann bought soup, an apple, and cake for her lunch. How much did she pay in all?

2. Bill's lunch was meat, potatoes, and ice cream. How much did Bill have to pay?

3. Barbara bought a salad, a roll, and custard. What did she have to pay?

Use the prices on page 88 in doing these problems.

4. Dave wanted soup, some meat, and a sandwich. Find the total cost of his lunch.

5. Tom was not hungry. He bought only soup and a roll. How much did he spend for his lunch?

6. Nancy bought an apple, a sandwich, and custard. How much did she spend in all?

7. Jean's lunch was salad, meat, and carrots. How much did Jean's lunch cost her?

8. Tony got a sandwich, ice cream, and some cake. How much did Tony's lunch cost?

9. Jerry had a glass of milk, meat, and potatoes. What did he spend?

10. Ellen had only a sandwich and a glass of milk. How much did she pay in all?

11. (a) Jim wanted meat, a salad, and ice cream. How much would he have to pay for all this?

(b) All the money Jim had was a quarter. Did he have enough money to buy all the things he wanted? How much more money did he need?

12. (a) Joe bought soup, a sandwich, and a cup of custard. How much did this cost?

(b) Joe gave the cashier a quarter. How much change did Joe get back?

Did You Check Your Work?

Pages 266-269 provide enrichment material which can be used after this page.

Earning Money

In some of these problems about earning money you add. In some problems you subtract. Think *why* you add or subtract in each problem.

Work the problems on another paper.

1. Sam's father gave Sam 10 cents for the fish he caught Saturday, and 15 cents for the fish he caught today. How much more did Sam earn today than he earned Saturday?

2. Ann earned a quarter for helping with the dishes. She spent a nickel for a ball. How much of her money did she have left?

3. Don earned 9¢ for helping weed the garden, 8¢ for helping clean up the yard, and 7¢ for carrying in some wood. Find how much his total earnings were.

4. Jean wants to earn 35 cents to spend for the class picnic. She has earned 24 cents now. How much more money does Jean need to earn?

5. Jill's mother let Jill pick some flowers to sell. Jill got 15 cents for her flowers on Monday and 12 cents on Tuesday. How much money did she earn on both days together?

6. Don sold some tomatoes for 38 cents and some beans for 25 cents. How much more money did he get for the tomatoes than he got for the beans?

7. Dick made two door stops. He sold them for 40¢ each. How much did he get for both?

Problems About Earning Money

In each problem think why you add or subtract. Do your work on another paper.

1. Tom earned 45 cents for helping to wash the car and 30 cents for helping to mow the lawn. How much less did he get for helping with the lawn?

2. Bob's mother paid him 20 cents for some eggs yesterday and 18 cents for some eggs today. How much did she give him in all?

3. Jerry worked 55 minutes helping his father clean the garage. Jerry's little brother Steve worked 40 minutes. How many minutes longer did Jerry work than Steve?

4. Ellen had a nickel and earned 18 cents making the beds. How much money did Ellen have then?

5. Sally made an apron. She sold it to her mother for $1.25. The materials for the apron cost 60 cents. How much money did Sally get for her work?

6. Bill and Tony helped mow a neighbor's lawn. Bill got 30 cents. Tony worked longer and got 50 cents. How much more did Tony get than Bill?

7. Sue and her mother made two cakes to sell. They sold the larger cake for $1.35. They sold the smaller cake for 60 cents.

(a) How much did they get for both cakes?

(b) How much less did they get for the smaller cake than for the larger cake?

Practicing Addition

This page will show you how much you have learned about different kinds of addition examples. Do your work on another paper.

Find the sums for these addition examples.

	a	*b*	*c*	*d*	e	*f*	*g*
1.	2 8	9 7	7 6	5 8	8 9	3 7	6 6
2.	10 8	23 6	54 2	62 7	42 56	26 40	40 31
3.	85 52	54 62	93 73	65 81	133 5	152 7	112 6

	a	*b*	*c*	*d*	e
4.	324 250	260 113	\$ .75 .50	\$1.50 1.20	\$2.14 .35

Copy these money numbers in columns and add them.

	a	*b*
5.	\$3.05 and \$2.03	\$2.50 and \$3.00
6.	\$1.25 and 41¢	\$2.04 and 5¢

Add and check.

	a	*b*	*c*	*d*	e	*f*	*g*
7.	3 2 4	9 4 3	7 8 5	8 9 6	24 31 22	73 12 4	51 42 56

Practicing Subtraction

The examples on this page will show you how much you have learned about subtraction.

Copy and subtract.

	a	*b*	*c*	*d*	*e*	*f*	*g*
1.	10 3	15 6	12 7	11 5	17 8	14 9	18 9
2.	17 5	14 4	38 3	26 4	58 5	29 3	68 4
3.	78 25	80 40	35 15	69 10	54 22	97 15	90 20

	a	*b*	*c*	*d*	*e*
4.	136 75	108 41	165 83	127 30	152 82
5.	568 423	799 126	276 63	349 143	706 204
6.	\$ .97 .75	\$1.68 .76	\$4.65 3.05	\$2.69 2.14	\$9.21 4.00

Copy these money numbers in columns and subtract.

	a	*b*	*c*
7.	\$1.58 — \$.42	\$3.49 — \$3.29	\$1.27 — \$.90
8.	\$1.06 — \$.61	\$6.75 — \$4.00	\$1.40 — 50¢
9.	\$9.09 — \$3.01	\$1.07 — \$.50	\$8.95 — \$8.64
10.	\$1.35 — 60¢	\$1.75 — 92¢	\$1.18 — 28¢

Ellen's Birthday Party

There are two numbers after each problem. One of them is the right answer. You get one number if you add, the other number if you subtract. Pick the right answer for each problem and write it on another paper. Do the work on the paper if you have to use your pencil to find the answer.

1. Ellen has invited 14 children to her party. She will invite 3 more children. How many will she invite in all? (17 or 11)

2. Ellen asked 17 children to come to her party. Two children could not come. How many children could come to the party? (19 or 15)

3. Ellen spent 13 cents for pink candies and 8 cents for white candies.

(a) How much less did Ellen spend for white candies than for pink candies? (21¢ or 5¢)

(b) How much did she spend for both kinds of candies? (21¢ or 5¢)

More Problems About Ellen's Party

Here are some more problems about Ellen's party. Just as you did on page 94, you are to pick the right answer after each problem and write it on another paper.

1. Eight boys and 7 girls came to the party. How many fewer girls than boys came to the party? (15 or 1)

2. There were 8 games at the party. The children played 6 games before they ate. How many games were left to play afterwards? (14 or 2)

3. The children had a peanut hunt. Jim found 16 peanuts and Dave found 12. Jim found how many more peanuts than Dave? (28 or 4)

4. Bill and Ann were partners at ring toss. Bill made 9 points and Ann made 13. How many points did both children make? (22 or 4)

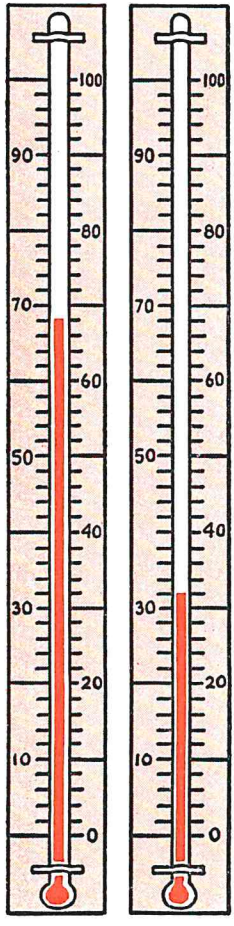
5. They played pin the tail on the donkey. Jerry pinned the tail 8 inches away. Jean pinned the tail 14 inches away. How much nearer than Jean did Jerry come? (22 in. or 6 in.)

6. Counting Ellen, there were 16 children at the birthday party. Nine of the children had horns to blow. The rest had drums. How many children had drums? (25 or 7)

7. There were 24 little cakes. Only 4 were left after the party. How many were eaten? (28 or 20)

Using a Thermometer

Temperature is measured in **degrees (°).**



1. Look at the picture of the two thermometers. Thermometer I shows that the temperature in Ann's schoolroom is 68 degrees (68°). Thermometer II shows that the temperature outdoors is 32°. How much colder is it outdoors than indoors? To find out, subtract 32 from 68.

2. When it gets warmer, the colored liquid in a thermometer rises. One winter day, Tom read the thermometer in the morning and in the afternoon. It rose from 34° to 56°. How many degrees warmer did it get?

3. One summer day, Tom noticed that the temperature went from 60° in the morning to 93° in the afternoon. How many degrees did the thermometer rise that day?

4. One Monday in winter the lowest temperature was 26°. On Tuesday the thermometer dropped to 20°. How much colder was it on Tuesday?

Measuring Heat

A thermometer measures heat.

Here are more problems about using a thermometer. "Thermometer" means "heat measurer."

1. Draw a picture of a thermometer like one of the thermometers on page 96.

When the temperature is 32°, it is just cold enough for water to freeze. On your thermometer, write "freezing" beside 32°. Draw an arrow (←—) to show 39°. When the thermometer says 39°, how many degrees above freezing is it?

2. On your thermometer, draw another arrow pointing to 20°. When the thermometer reads 20°, how many degrees below freezing is it?

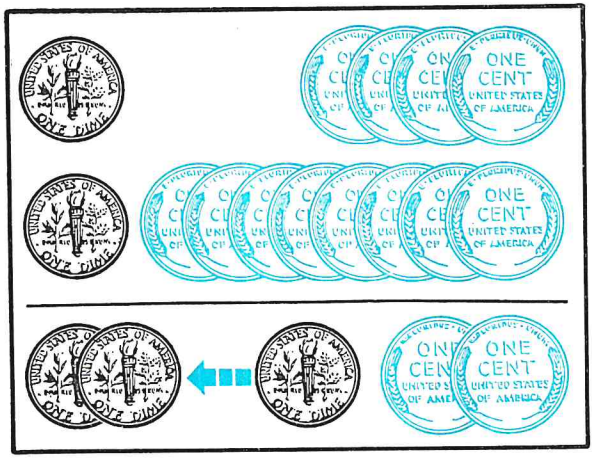
3. A good temperature for a classroom is 68°. Tom made this heat record for his classroom.

Time	Temperature	Too Cold	Too Warm
9:00	63°	5°	
11:00	67°	?°	
1:00	69°		?°
3:00	78°		?°

At 9 o'clock in the morning, the thermometer read 63°. That was 5° too cold. At 3 o'clock in the afternoon, the temperature was 78°. How many degrees too warm was that?

Copy and finish Tom's chart for him.

Adding Cents and Dimes



Jean

dimes	cents
1	4
1	8
3	2

1. Jean's mother promised her 14 cents for helping with the housework yesterday and 18 cents for helping today.

To find how much money she will have, Jean adds the cents column first. $4 + 8 = 12$. Twelve cents is the same as 1 dime and 2 cents.

Jean writes the 2 cents in the cents column. She "carries" the dime and adds it to the other dimes. How much money will she have?

Copy and add these money numbers.

	a	*b*	*c*	*d*	*e*	*f*
2.	17¢ 28¢	39¢ 34¢	47¢ 17¢	26¢ 57¢	35¢ 28¢	25¢ 29¢
3.	16¢ 36¢	27¢ 45¢	68¢ 29¢	54¢ 38¢	19¢ 52¢	55¢ 27¢

Addition With Carrying

1. Our mothers made sandwiches for our picnic. They made 27 peanut butter sandwiches and 33 meat sandwiches. To find how many sandwiches we had for our picnic, add 27 and 33.

tens	ones
2	7
3	3
6	0

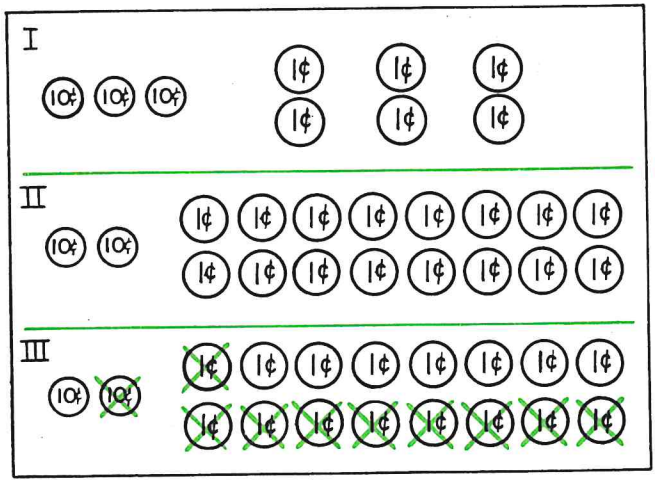
Add the ones column first. $7 + 3 = 10$. Write 0 in the ones column and carry the 1 ten to the tens column. How many sandwiches did our mothers make?

Copy and add these numbers as you added cents and dimes.

	a	b	c	d	e	f
2.	36 54	19 62	28 66	69 19	19 76	55 17
3.	18 53	19 43	59 27	59 38	39 11	19 15
4.	39 14	25 16	13 77	32 38	78 17	48 42
5.	24 39	38 48	16 35	42 29	67 29	14 27
6.	22 58	43 39	48 14	25 25	56 38	37 24
7.	27 47	68 19	46 37	18 55	26 39	44 18

Pages 270 and 271 provide enrichment material which can be used after this page.

Subtracting Cents and Dimes



Jerry

dimes	cents
3	6
1	9
1	7

1. Jerry has 36 cents (see Picture I above). He wants to spend 19¢ of this for some stamps for his stamp book. To find how much money he will have left, he subtracts 19 from 36.

Jerry cannot take 9 cents from 6 cents, so he changes one of the 3 dimes to pennies (Picture II). To subtract, Jerry takes 9 cents from 16 cents in the cents place (Picture III). He takes 1 dime from 2 dimes. How much money will he have left?

Copy the examples below and subtract.

	a	b	c	d	e	f
2.	31¢ 17¢	35¢ 27¢	72¢ 35¢	54¢ 35¢	92¢ 24¢	63¢ 29¢
3.	76¢ 47¢	86¢ 39¢	94¢ 57¢	51¢ 23¢	82¢ 79¢	43¢ 37¢

Borrowing from the Tens Place

1. There are 52 books in our class library. The children have taken out 25 books. To find how many books are left, subtract 25 from 52.

5	2
2	5
2	7

First think of 52 as 4 tens and 12 ones. Then subtract 5 from 12, and 2 tens from 4 tens.

How many books are left?

Copy and subtract. Remember what happens to the tens when you borrow one ten.

	a	*b*	*c*	*d*	*e*	*f*
2.	34 16	45 28	93 36	94 69	75 26	43 18
3.	72 67	85 69	96 48	87 29	88 19	53 25
4.	51 34	77 18	71 55	44 18	82 56	73 34

Pages 272 and 273 provide enrichment material which can be used after this page.

Checking Subtraction

You check subtraction by adding.

1. Sue made 24 cookies. She wants to know how many will be left if she and her friends eat 5 of the cookies.

Cookies made	24	19	cookies left
Cookies eaten	5	5	cookies eaten
Cookies left	19	24	cookies made

Sue subtracts 5 from 24. She gets 19 as her answer.

Sue wants to make sure she is right. So she adds the 5 cookies they will eat to the 19 left to find out how many cookies there were at first.

To check subtraction, **add** the **answer** and the **smaller number** to get the **larger number.**

2. Bill had 42 marbles. If he gives Allen 13 of them, how many marbles will Bill have left?

On another paper, subtract 13 from 42. To check your work, add the number left to 13. Do you get 42?

Copy these examples and subtract. Check each answer with an addition example.

	a	*b*	*c*	*d*	e	*f*
3.	23 6	41 8	35 6	52 7	21 6	43 7
4.	92 46	86 67	117 94	167 97	159 85	119 20

Checking Money Subtraction

1. Peggy has a quarter. If she spends 7 cents for jacks, how much will she have left?

25¢	money at first
7¢	money spent
18¢	money left

Subtract 7¢ from 25¢. Check by adding 18¢ (the money left) and 7¢ (the money spent). Do you get the 25¢ Peggy had at first?

2. Tom has 45 cents. If he spends 18 cents for a toy truck, how much will he have left?

On another paper, subtract 18¢ from 45¢, and check by adding.

Copy these subtraction examples and find the remainders. Check each answer by adding.

	a	b	c	d	e	f
3.	32¢ 8¢	28¢ 9¢	31¢ 3¢	52¢ 5¢	43¢ 4¢	65¢ 9¢
4.	22¢ 9¢	53¢ 7¢	31¢ 7¢	27¢ 8¢	41¢ 4¢	36¢ 8¢
5.	73¢ 45¢	82¢ 24¢	74¢ 58¢	81¢ 35¢	95¢ 77¢	83¢ 59¢
6.	93¢ 58¢	64¢ 39¢	51¢ 42¢	51¢ 18¢	84¢ 46¢	97¢ 89¢
7.	76¢ 69¢	55¢ 18¢	67¢ 34¢	84¢ 57¢	35¢ 26¢	49¢ 42¢

More Addition With Carrying

$$\begin{array}{r} 84 \\ 36 \\ \hline 120 \end{array}$$

1. Bill had 84 marbles. He bought 36 more marbles. To find how many marbles Bill had then, add 84 and 36.

Add the ones column first. $4 + 6 = 10$. This is 1 ten and no ones, so you write 0 in the ones column and carry the ten to the tens column. Think: "9 and 3 are 12." How many marbles did Bill have in all?

Copy these examples and add.

	a	*b*	*c*	*d*	*e*	*f*
2.	56 58	47 34	85 92	67 56	97 47	85 79
3.	63 49	84 87	96 56	75 88	95 77	67 35
4.	36 97	84 69	38 52	79 35	28 77	79 41
5.	73 67	26 59	85 54	12 68	96 22	66 34

Copy each example below in columns and add.

	a	*b*	*c*
6.	71 + 79	39 + 63	37 + 82
7.	69 + 99	45 + 65	64 + 88
8.	52 + 39	97 + 98	59 + 74
9.	98 + 86	37 + 89	97 + 66
10.	25 + 69	49 + 58	66 + 78

Carrying With Money Numbers

1. Sue and Bob are saving to buy a collar for their dog. Sue has saved 68¢ and Bob has saved 75¢. To find how much they have saved for the dog collar, add \$.68 and \$.75.

\$ .68
.75
\$1.43

You add the cents column first. 8¢ and 5¢ = 13¢. Think of 13¢ as 1 dime and 3¢. Write the 3 in the cents column and carry the dime to the dimes column. Think: "7 and 7 are 14." 14 dimes make 1 dollar and 4 dimes. See how the sum is written.

How much have Sue and Bob saved?

Copy these examples and add.

	a	*b*	*c*	*d*	*e*	*f*
2.	\$ .86 .37	\$ .47 .86	\$ .56 .94	\$ .87 .75	\$ .49 .98	\$ .65 .67
3.	\$ .76 .48	\$ .69 .39	\$ .54 .86	\$ .67 .57	\$ .37 .98	\$ .75 .95
4.	\$ .94 .37	\$ .85 .96	\$ .99 .69	\$ .97 .73	\$ .58 .44	\$ .42 .97

Copy in columns and add.

	a	*b*	*c*
5.	\$.69 + \$.95	\$.39 + \$.84	72¢ + 89¢
6.	35¢ + 82¢	85¢ + 36¢	43¢ + 77¢

Pages 274 and 275 provide enrichment material which can be used after this page.

A Shorter Way To Check Subtraction

145
96
49
145

1. The 145 children in Sam's school are going to a school picnic. School buses can take 96 of them. The rest will go in other cars. To find how many children are to go in other cars, subtract 96 from 145.

First, subtract the ones. $15 - 6 = 9$. You have borrowed 1 ten, so subtract 9 tens from 13 tens. How many children will go in other cars?

To check this example, you add 96 and 49. You can do this without copying the 96 and 49.

Cover the 145. Add 96 and 49. Write the sum below. If the sum is not 145, find what you did wrong. Your mistake may be either in subtracting or in checking.

Copy and subtract. Check in the shorter way.

	a	*b*	*c*	*d*	e
2.	132 − 84	163 − 77	174 − 89	184 − 85	143 − 86
3.	195 − 96	177 − 99	125 − 98	143 − 49	133 − 65

Copy in columns, subtract, and check.

	a	*b*	*c*
4.	114 − 38	131 − 55	170 − 75
5.	125 − 79	117 − 98	132 − 39
6.	123 − 48	121 − 28	114 − 46
7.	111 − 86	124 − 37	112 − 67

Subtraction With Money Numbers

1. Jerry has saved $1.30. He wants to buy a set of stamps costing 75¢. To find how much money Jerry would have left, subtract $ .75 from $1.30.

$1.30
.75
$ .55
$1.30

The work in the box shows how you subtract and check. How much money would Jerry have left if he buys the stamps?

Copy these examples, subtract, and check.

	a	*b*	*c*	*d*
2.	$1.50 .76	$1.75 .88	$1.27 .79	$1.72 .93
3.	$1.42 .89	$1.61 .95	$1.32 .37	$1.54 .96
4.	$1.10 .21	$1.41 .93	$1.60 .63	$1.31 .48
5.	$1.75 .85	$1.50 .69	$1.41 .42	$1.23 .65

Copy in columns, subtract, and check.

	a	*b*	*c*
6.	$1.28 — $.49	$1.48 — $.88	$1.21 — $.62
7.	$1.37 — $.69	$1.43 — $.84	$1.17 — $.48
8.	$1.30 — $.32	$1.66 — $.77	$1.50 — 54¢
9.	$1.29 — 85¢	$1.31 — 59¢	$1.13 — 86¢
10.	$1.12 — 77¢	$1.66 — 79¢	$1.78 — 76¢
11.	$1.15 — 58¢	$1.95 — 99¢	$1.64 — 68¢

Using Zeros in Addition

You have found that adding a zero does not increase the number to which it is added. The examples on this page will help you remember how to use zeros in addition.

Copy these examples and add.

	a	*b*	*c*	*d*	*e*	*f*
1.	10 7	5 20	30 40	20 54	41 40	90 56
2.	30 8	19 50	45 5	7 33	3 40	10 90
3.	35 40 23	20 14 30	23 26 20	30 12 46	39 30 30	40 10 20
4.	12 7 10	90 9 43	45 80 7	4 56 40	20 80 9	5 98 4
5.	138 60	150 42	106 51	320 140	504 403	600 100

	a	*b*	*c*	*d*	*e*
6.	\$4.03 2.90	\$3.50 2.30	\$4.02 3.06	\$7.00 2.00	\$1.50 3.04

Copy in columns and add.

	a	*b*	*c*
7.	146 + 60	43¢ + 57¢	\$1.70 + 68¢

Using Zeros in Subtraction

The examples on this page will help you remember how to use zeros in subtraction.

Copy these examples, subtract, and check.

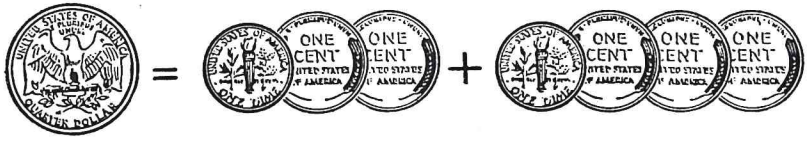
	a	b	c	d	e	f
1.	10 5	20 7	14 4	30 12	37 10	56 26
2.	126 90	140 51	150 60	108 36	133 83	109 20
3.	247 42	369 30	280 35	460 60	273 70	230 26
4.	376 104	567 320	806 205	500 200	906 306	748 246

	a	b	c	d	e
5.	$1.26 .50	$7.50 1.50	$6.09 2.07	$4.28 2.00	$8.37 4.31

Copy in columns, subtract, and check.

	a	b	c
6.	20 − 9	68 − 28	165 − 59
7.	109 − 75	137 − 90	150 − 80
8.	130 − 86	106 − 84	329 − 319
9.	578 − 35	659 − 607	186 − 70
10.	$1.67 − $.97	$1.07 − 45¢	$1.25 − 75¢
11.	$1.43 − 50¢	$5.36 − $2.30	$4.50 − $2
12.	$1.39 − 63¢	$1.04 − 94¢	$1.56 − 72¢

Can You Make Change?



25¢
12¢
13¢

1. Bill bought some marbles for 12 cents. He gave the clerk a quarter. The clerk gave him back 3 cents and a dime in change. The clerk said, "Twelve cents and 3 cents make 15 cents, and 10 makes 25."

Bill wanted to be sure he got the right change. He subtracted 12¢ from 25¢. How much change should he have had?

2. Suppose you buy something costing 8 cents and give the clerk a quarter. Draw a picture of four coins to show the change you should get. Write on each coin the number that shows its value.

How much change should you get? Check by subtracting 8¢ from 25¢.

More About Making Change

1. Ann bought some candy for 18 cents. She gave the clerk a half dollar. The picture above shows the change he gave her. How much was it?

To be sure the change was correct, subtract 18¢ from 50¢.

2. Dave paid 60 cents for a toy tractor. He gave the clerk a dollar. The picture shows the change he got. How much change did he get? Check your answer by subtraction.

3. Bob sold his mother some eggs for 10 cents. She gave him a quarter. What two coins could he give her in change? How much change did he give her? Subtract to check.

4. Don sold a neighbor 16 cents' worth of tomatoes. She gave him a half dollar. What coins could he give her in change? How much change should he give her? Check by subtracting.

Pages 276-279 provide enrichment material which can be used after this page.

Adding Hundreds With Carrying

$$\begin{array}{r} 549 \\ 113 \\ \hline 662 \end{array}$$

1. Jerry counted his stamps. He had 549 stamps in his big stamp book and 113 stamps in his trading book. How many stamps had Jerry altogether?

Add 549 and 113. Add the ones first. $9 + 3 = 12$. You write 2 under the 3 and carry 1 to the tens place. Think: $5 + 1 = 6$. Last, you add the hundreds. How many stamps did Jerry have in all?

Copy the examples below and add.

	a	*b*	*c*	*d*	e
2.	436 238	534 128	348 545	35 147	256 34
3.	226 766	609 184	423 527	218 656	527 267
4.	339 547	657 136	236 448	339 358	249 531

Copy each of the following examples in columns and add.

	a	*b*	*c*
5.	679 + 213	538 + 344	738 + 156
6.	358 + 239	648 + 123	329 + 345
7.	209 + 546	137 + 848	464 + 309
8.	649 + 313	508 + 208	129 + 636
9.	367 + 525	323 + 429	556 + 318
10.	715 + 167	138 + 722	255 + 425

Subtracting Hundreds

1. In his large stamp book, Jerry has 157 United States stamps and 392 stamps from other countries. You can find how many more stamps he has from other countries than from the United States by subtracting 157 from 392.

$$\begin{array}{r} 392 \\ 157 \\ \hline 235 \end{array}$$

Start with the ones. Since you cannot subtract 7 ones from 2 ones, you must change one of the 9 tens to 10 ones. 10 ones and 2 ones = 12 ones. 12 ones − 7 ones = 5 ones. You write 5 in the ones column of the answer.

Now subtract the tens. Remember that one of the 9 tens was changed to ones. 8 tens − 5 tens = 3 tens. Last, you subtract 1 hundred from 3 hundred.

Check the answer by adding in the shorter way.

Copy the following examples, subtract, and check.

	a	*b*	*c*	*d*	*e*
2.	691 536	587 459	474 247	468 449	576 339
3.	284 26	485 148	164 39	384 38	446 237
4.	485 367	292 88	651 647	393 345	873 457
5.	941 238	873 344	482 175	867 239	892 867
6.	781 464	696 349	982 653	853 125	986 927

Carrying in Tens Place

$$\begin{array}{r} 285 \\ 341 \\ \hline 626 \end{array}$$

1. Bob's school gave a fine program for the parents. They gave it twice. The first time 285 people came. The second time, 341 people came. Find out how many people came in all by adding 341 and 285.

First add the ones: $5 + 1 = 6$. You write 6 in the ones place. Then add the tens: **8 tens and 4 tens are 12 tens.** Twelve tens are 120, or 1 hundred and 2 tens. Write 2 in the tens place, and carry the 1 hundred to the hundreds place. Add the hundreds: $3 + 3 = 6$. How many people came?

Copy and add.

	a	*b*	*c*	*d*	e
2.	369 370	264 484	152 296	341 465	183 134
3.	353 83	292 233	381 381	343 595	464 391
4.	257 172	442 285	73 243	672 162	493 135

Copy in columns and add.

	a	*b*	*c*
5.	393 + 262	632 + 287	592 + 284
6.	425 + 493	583 + 173	63 + 896
7.	173 + 366	290 + 543	155 + 94
8.	388 + 171	64 + 863	392 + 97

Borrowing from the Hundreds Place

1. Tony went with his father on a 465-mile trip. The first day they drove 285 miles. Find how many miles they still had to drive by subtracting 285 from 465.

$$\begin{array}{r} 465 \\ 285 \\ \hline 180 \end{array}$$

5 ones − 5 ones = 0. You write 0 in the ones column. Since you cannot take 8 tens from 6 tens, you must change one of the 4 hundreds to 10 tens. 10 tens + 6 tens = 16 tens. 16 tens − 8 tens = 8 tens. 3 hundreds − 2 hundreds = 1 hundred. How many miles did they still have to go?

Check the answer by adding.

Copy, subtract, and check.

	a	*b*	*c*	*d*	*e*
2.	938 680	827 592	636 390	745 264	603 273
3.	746 473	534 261	924 354	210 80	417 163
4.	954 493	347 81	135 75	865 383	914 870

	a	*b*	*c*
5.	927 − 664	858 − 496	849 − 267
6.	949 − 396	579 − 83	359 − 74
7.	749 − 574	159 − 90	318 − 226
8.	509 − 358	255 − 62	208 − 130
9.	326 − 91	944 − 564	601 − 510

Carrying Twice in Addition

$$\begin{array}{r} 245 \\ 189 \\ \hline 434 \end{array}$$

1. Sally's hobby is collecting buttons. She has 245 small buttons and 189 large buttons. To find how many buttons she has in all, you add 245 and 189.

First you add the ones. 14 ones = 1 ten and 4 ones. Carry 1 ten to the tens and add the tens. 13 tens = 1 hundred and 3 tens. Carry 1 hundred to the hundreds and add the hundreds. How many buttons does Sally have?

Copy and add.

	a	*b*	*c*	*d*	e
2.	169 88	188 292	367 159	279 237	486 289
3.	697 257	296 77	498 226	77 184	403 399
4.	398 447	57 184	389 31	179 163	679 283
5.	588 364	783 76	358 279	648 93	79 345

	a	*b*	*c*
6.	79 + 894	67 + 743	679 + 23
7.	469 + 398	87 + 734	748 + 67
8.	386 + 265	379 + 79	465 + 39
9.	79 + 368	179 + 255	253 + 447
10.	167 + 34	614 + 288	259 + 77

Borrowing Twice in Subtraction

1. Sally took 98 of her prettiest buttons to a hobby show at school. She has 245 buttons in all. Subtract to find how many she left at home.

$$\begin{array}{r} 245 \\ 98 \\ \hline 147 \end{array}$$

First you subtract the ones. Since you cannot take 8 from 5, you must borrow 1 ten from the 4 tens, and subtract 8 from 15.

There are only 3 tens left. Since you cannot take 9 tens from 3 tens, you must borrow 1 hundred from the 2 hundreds. Subtract 9 tens from 13 tens. There is only 1 hundred left.

Check the answer by adding.

Copy, subtract, and check.

	a	*b*	*c*	*d*	*e*	*f*
2.	750 − 471	815 − 426	954 − 186	833 − 696	267 − 78	841 − 475
3.	675 − 299	575 − 488	230 − 76	357 − 159	756 − 397	964 − 576
4.	828 − 389	630 − 165	522 − 374	920 − 468	937 − 738	820 − 787

	a	*b*	*c*
5.	727 − 268	914 − 349	923 − 187
6.	745 − 647	738 − 389	813 − 435
7.	646 − 247	934 − 657	959 − 468
8.	858 − 359	673 − 187	930 − 846
9.	734 − 669	627 − 438	450 − 288

Adding Dollars and Cents

\$2.67
2.95
\$5.62

1. Last month Bob earned \$2.67 by selling eggs. This month he earned \$2.95.

To find out how much he earned in two months, add \$2.67 and \$2.95. You must carry twice. How much did Bob earn?

Copy and add. Be sure to write the point and dollar sign in each answer.

	a	*b*	*c*	*d*
2.	\$4.76 3.64	\$2.07 3.84	\$3.48 4.54	\$1.87 4.56
3.	\$2.60 7.55	\$2.24 4.64	\$5.85 4.15	\$2.82 6.29
4.	\$ .79 3.19	\$2.36 6.39	\$2.69 5.86	\$1.92 7.08
5.	\$1.45 .38	\$4.93 2.76	\$3.69 5.39	\$1.58 9.97

	a	*b*	*c*
6.	\$4.78 + \$3.96	\$2.59 + \$4.74	\$3.98 + \$5.72
7.	\$8.36 + 95¢	\$4.35 + \$2	\$ .89 + \$7.68
8.	\$6.29 + \$2.89	76¢ + \$5.67	\$5.85 + \$3.49
9.	\$8.65 + 47¢	\$1.37 + \$7.89	\$5.68 + 95¢
10.	\$5.34 + \$3.76	97¢ + \$2.79	\$4.55 + \$3.64
11.	\$2.51 + \$7.59	\$3.92 + 66¢	\$1.29 + \$5.82
12.	\$1.88 + 79¢	\$4.79 + \$5.31	\$4.51 + \$4.25
13.	\$7.80 + \$2.48	95¢ + \$3.20	\$6.98 + \$3.95

Subtracting Dollars and Cents

1. One month Bob sold \$5.00 worth of eggs. In the same month, he spent \$2.57 for feed for his chickens. To find how much more money Bob received than he spent, subtract \$2.57 from \$5.00.

\$5.00
2.57
\$2.43

Here you cannot borrow from the tens place, because there are no tens. You must go to the hundreds place, and change 1 hundred into 10 tens. Then you can borrow 1 of the tens to change into ones. 10 ones − 7 ones = 3 ones. 5 tens from 9 tens are 4 tens. 2 hundreds from 4 hundreds are 2 hundreds.

How much more money did Bob take in than he spent? Check by adding.

Copy, subtract, and check.

	a	b	c	d	e
2.	\$3.00 1.69	\$7.00 4.88	\$8.48 5.69	\$6.24 3.97	\$7.25 3.26
3.	\$4.10 1.78	\$5.35 2.69	\$7.09 2.40	\$6.25 4.97	\$9.50 5.17

	a	b	c
4.	\$4.40 − \$2.49	\$9.14 − \$5.29	\$7.82 − \$6.75
5.	\$2.30 − 41¢	\$4 − \$3.50	\$3.37 − 88¢
6.	\$6.34 − \$2.96	\$5.00 − \$3.95	\$6.20 − \$5.36
7.	\$9 − \$5.14	\$7.17 − \$3.71	\$5 − \$2.72
8.	\$1.03 − 59¢	\$8.11 − \$7.69	\$2.15 − 36¢

Pages 280 and 281 provide enrichment material which can be used after this page.

On the Farm

Before you work each problem, think: "Do I add or subtract? Why?" Work the problems on another paper.

1. Don lives on a farm. There are 160 apple trees and 136 peach trees on the farm. How many more apple trees than peach trees are there?

2. Last year they had only 6 cherry trees. They planted 25 more cherry trees this year. How many cherry trees do they have now?

3. Last fall there were 452 fruit trees of all kinds. In the winter they cut down 23 old trees. How many trees were left?

4. They picked 296 baskets of red apples and 308 baskets of yellow apples. How many baskets of apples did they pick?

5. They had 213 baskets of blue grapes and 89 baskets of white grapes. How many more blue grapes than white did they have?

6. Don sometimes helps to sell the fruit. He sold a man some peaches for 75¢. The man gave him $5.00. How much change did Don give him back?

7. One morning, Don sold $2.65 worth of fruit in an hour. The next hour he sold $4.75 worth. How much money did he get in two hours?

8. Don's father wanted to pick 200 baskets of pears one day. By noon, they had picked 168 baskets. How many baskets were left to pick?

Remembering Addition

This practice will help you remember addition.

Copy and add.

	a	b	c	d	e	f
1.	45 83	92 60	80 20	26 7	9 34	27 39
2.	69 42	85 75	526 205	375 284	146 569	228 73

	a	b	c	d	e
3.	$ .80 .56	$ .71 .49	$4.07 3.46	$ .47 2.08	$1.85 .39

Remembering Subtraction

This will help you remember subtraction.

Copy, subtract, and check.

	a	b	c	d	e	f
1.	157 93	126 76	47 9	52 48	90 66	137 38
2.	971 308	949 774	763 455	326 267	708 543	800 269

	a	b	c
3.	$1.15 — $.40	$2.95 — 88¢	$2.40 — $1.50
4.	$8.27 — $5.61	$9.03 — $2.86	$5.04 — $3.07
5.	$2 — 95¢	$9.43 — $7.38	$6.00 — $5.53
6.	$1.52 — 88¢	$3 — 81¢	$7.83 — $2.55
7.	$6.09 — $1.26	$4.01 — $3.35	$5 — $1.75

What Measures Do You Know?

You have used several measures. Let's see how much you remember about them.

1. How many eggs are a *dozen* eggs?

2. How many *inches* are there in a *foot*? In a *yard*?

3. A *yard* is how many *feet* long?

4. How many *days* are there in a *week*?

5. A *quarter* is worth how many *cents*?

6. How many cents is a half dollar worth?

7. A dollar is worth how many cents?

8. Copy this table of measures and fill in the missing numbers.

1 nickel = ? cents	1 dozen = ? things
1 dime = ? cents	1 foot = ? inches
1 quarter = ? cents	1 yard = ? inches
1 half dollar = ? cents	1 yard = ? feet
1 dollar = ? cents	1 week = ? days

You have learned that **in.** means "inches" or inch." The abbreviation **ft.** means "feet" or "foot," and **yd.** means "yards" or "yard." There are other short ways of writing measure words.

9. What do you think **hr.** stands for?

10. What does **min.** mean?

11. What does **wk.** mean?

12. What does **da.** mean?

Some Questions About Measures

Can you answer these questions? Your table of measures will help you.

1. How many eggs must be added to 9 eggs to make a dozen eggs?

2. Sixteen is how many more than 1 dozen?

3. A dozen apples and 8 apples are how many apples?

4. One foot and 5 inches are how many inches?

5. One yard and 10 inches are how many inches?

6. One yard and 2 feet are how many feet?

7. A week and 3 days are how many days?

8. Twelve days are how many more days than a week?

9. One half of a dozen oranges is how many oranges?

10. How many eggs are one fourth of a dozen eggs?

11. One half of a foot is how many inches?

12. One fourth of a foot is how many inches?

13. Six oranges are what part of a dozen oranges?

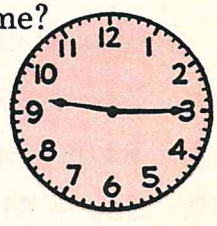
14. Three eggs are what part of a dozen eggs?

15. How many quarters make a half dollar?

16. A quarter is worth what part of a half dollar?

17. A nickel is worth what part of a dime?

18. Look at the picture of a clock. What part of an hour is 15 minutes?



19. How many minutes are there in a half hour?

Can You Handle Numbers?

Diagnostic Check Test 2A

On the next four pages are three check tests to show you how much arithmetic you have learned so far this year.

This is the first test. It will help you find out how much you know about addition and subtraction. Do your work on another paper. Do not write in this book.

Copy and add.

1.	57 92	**2.**	68 7	**3.**	43 18	**4.**	456 137
5.	25 41 32	**6.**	4 5 3	**7.**	2 6 7	**8.**	8 7 6

Copy, subtract, and check.

9.	128 73	**10.**	86 9	**11.**	120 24	**12.**	150 80
13.	854 506	**14.**	627 263	**15.**	453 375	**16.**	\$7.40 5.08

Copy each example in columns and work.

17. 347 + 89

18. \$4.08 + \$4.92

19. 53¢ + \$1.75

20. \$8.70 — \$4.90

21. \$5.16 — 98¢

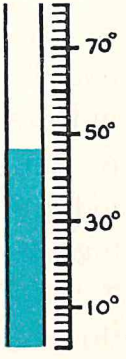
22. \$3.00 — \$2.36

Do You Understand Numbers?

Diagnostic Check Test 2B

The test on this page will show you how much you understand about the *meaning* of numbers. Write your answers on another paper.

1. Write the number that is 7 more than 28.
2. Write the number that is 3 less than 51.
3. What is the sum of 25 and 9?
4. What is the difference between 25 and 9?
5. What number comes just after 399?
6. What number comes just before 250?
7. What number comes between 109 and 111?
8. 687 means how many hundreds, how many tens, and how many ones?
9. $2.43 means how many dollars, how many dimes, and how many cents?
10. Write the number that means 8 hundreds, 1 ten, and 9 ones.
11. Which number is smaller, 204 or 187?
12. How much larger is 50 than 47?
13. What two numbers do you add to check the example $32 - 7 = 25$?
14. 1 ft. and 5 in. = how many inches?
15. 1 yd. − 3 in. = how many inches?
16. A dime is worth twice as much as what other coin?



17. How many degrees does the thermometer show?

Using Addition and Subtraction

Diagnostic Check Test 2C

The test on the next two pages will show you how much you have learned about using addition and subtraction in problems. Do you know *when* and *why* you add or subtract in a problem?

Find your answers on another paper.

1. Bill and Dan were playing marbles. They put 20 marbles in the ring. Bill shot 4 of the marbles out. How many marbles were left in the ring?

2. Dave's mother is knitting him a scarf. It is to be a yard long. She has finished 27 inches of it. How many more inches must she knit?

3. Sam, Don, and Bob went fishing. Sam caught 7 fish, Don caught 12 fish, and Bob caught 10. How many fish did all three catch?

4. Don is 49 inches tall. His father is 71 inches tall. How many inches taller than Don is his father?

5. One morning the thermometer read 49° outdoors and 68° indoors. How many degrees warmer was it indoors than outdoors?

6. Bob's hens laid 17 eggs yesterday and 23 eggs today. How many eggs did the hens lay on both days together?

7. Tom had 150 shells in his shell collection. He threw away 87 broken shells. How many shells did Tom have left?

Diagnostic Check Test 2C *(Continued)*

8. On Don's farm there are 100 chicks and 24 hens. How many fewer hens than chicks are there?

9. Don's father expected to have 300 baskets of peaches. Only 286 baskets were picked. How many baskets less than 300 was this?

10. The children in Tom's room planted seeds to watch them grow. They planted 46 beans and 37 grains of corn. How many seeds did they plant?

11. The children kept a record of the seeds they planted. Only 37 of the 46 beans came up. How many of the beans did not come up?

12. Dave and Tom have sets of blocks. There are 110 blocks in Dave's set and 96 in Tom's set.

(a) How many blocks do the two boys have?

(b) How many more blocks are there in Dave's set than in Tom's set?

13. Bill had $2.75 in his bank. Then he put in a half dollar. How much money did Bill have then?

14. There are 198 children on the first floor of Jim's school. There are 205 on the second floor. Jim's school has how many children in all?

15. Ann has saved 86¢ toward a set of doll dishes costing $1.75. How much money does she still need?

16. Don bought a rake for $1.19. He gave the clerk $1.50. How much change did Don get back?

Peggy's Jacks

1. Peggy likes to play jacks. She is playing with 12 jacks. When Peggy picks up her jacks one at a time, how many times will it take her to pick them all up?

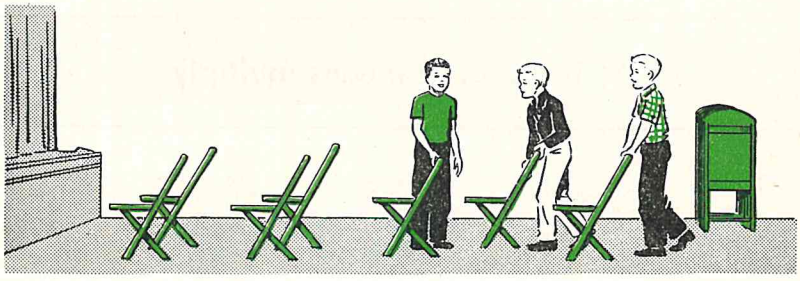
2. Now Peggy picks up the jacks two at a time. On a paper, draw a picture of 12 jacks like this one: ✳ Put a line around each 2 jacks. How many 2's are there?

3. Draw another picture of 12 jacks. Draw a line around each 3 jacks. If Peggy picks up all the jacks by 3's, how many times will it take her?

4. Draw another picture of 12 jacks, and divide them into groups of 4. To pick up 12 jacks by 4's, how many times will Peggy need?

5. Draw 12 jacks again, and divide them into groups of 6. How many groups are there?

Putting Chairs in Rows



1. The children in Tom's room gave a puppet show. Twenty mothers said they would come to see the show. Tom, Dan, and Bill got out 20 chairs for them. If they put the chairs in 5 equal rows, how many chairs were there in each row? To find out, draw a picture of 20 chairs like this: ⊢ Draw them in 5 equal rows.

2. Draw the chairs in 4 equal rows. How many chairs are there in each row now?

3. If the boys put the 20 chairs in 2 equal rows, how many chairs would there be in each row?

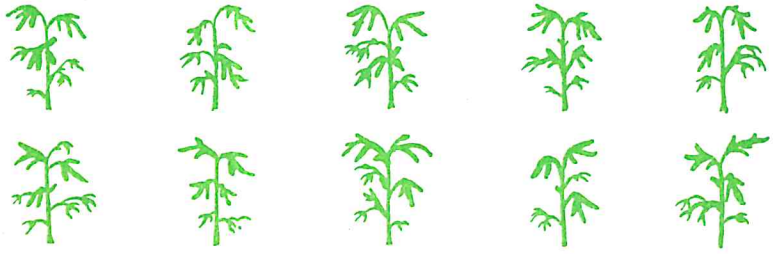
4. Everybody liked the show so much that the children gave another show. This time 24 parents said they were coming. If the boys put 24 chairs in 6 equal rows, how many chairs would there be in each row? Draw the chairs.

5. Draw the 24 chairs in 4 equal rows. How many chairs are there in each row?

6. If the 24 chairs are in 3 equal rows, how many chairs are in each row?

Can You Multiply?

× is times. It means multiply.



1. Don's father gave him some little tomato plants. Don planted them the way the picture shows.

To find out how many plants he had, Don could count all the plants. Or he could add 5 and 5. Or he could multiply. Multiplying is just a short way of adding several groups, with the same number in each group.

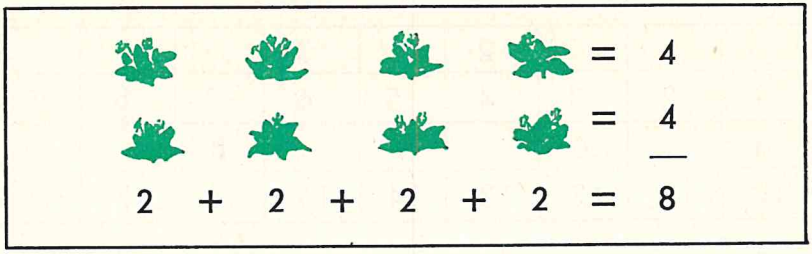
If Don multiplies, he will say, "Two 5's are 10." Two 5's can be written two ways, as 2×5 or $\begin{array}{r} 5 \\ \times\ 2 \\ \hline \end{array}$

2. Bill has 2 red marbles, 2 blue marbles, 2 green marbles, 2 yellow marbles, and 2 brown marbles in his pocket.

On another paper, draw a picture of these marbles and color them.

Bill has five times 2 marbles in his pocket. How many marbles are five 2's?

More About Multiplying



1. Jill planted 2 rows of pansy plants with 4 plants in each row. She counted them by rows: two 4's are 8. Then she counted them by pairs: four 2's are 8. These two multiplication facts belong together:

$2 \times 4 = 8$ $4 \times 2 = 8$

2. Bill can buy 2 little marbles for a penny. He can find how many marbles he can buy for 8 cents by adding eight 2's. Or Bill can multiply 2 by 8.

$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16$ $8 \times 2 = 16$

3. Jean has two boxes of colored crayons. There are 8 crayons in each box. To find how many crayons she has, add two 8's or multiply.

$8 + 8 = 16$ $2 \times 8 = 16$

These two facts belong together:

$8 \times 2 = 16$ $2 \times 8 = 16$

4. You have already learned some multiplication facts about 2. Two nickels are worth 1 dime, or 10¢. Two half dozens are one dozen, or 12. $7 + 7 = 14$, so two 7's are 14. How much are two 3's? two 9's?

Using a Number Table of 2's

	1		2		3		4	
1	2	3	4	5	6	7	8	9
5		6		7		8		9
10	11	12	13	14	15	16	17	18

1. Do you remember how to count by 2's? In the number table above, each number you use in counting by 2's is printed in blue. "1" is written over the first 2, "2" is written over the second 2 (4), "3" is written over the third 2 (6), "4" is written over the fourth 2 (8), and so on.

What number is written over the 18? How many 2's are there in 18? Nine 2's = what number? Two 9's = what number?

2. Do you see how to use the number table? It shows that one 2 = 2, two 2's = 4, three 2's = 6.

How much are four 2's? Five 2's are how much? Six 2's? Seven 2's? Eight 2's? Nine 2's?

3. Look at the blue 6 in the table. It shows that three 2's = 6 and also that two 3's = 6. The blue 8 also shows two multiplication facts. It shows that four 2's = 8, and two 4's = 8.

What two multiplication facts does the 10 show?

4. What two multiplication facts does the 14 show?

5. What two facts does the 12 show? The 16?

Multiplying With 2's

In multiplication, the answer is the **product.**

1. Look at the number table on page 132. Which colored number shows you the product of 4×2?

2. What does the table show is the product of 2×7?

3. Two 8's can be written 2×8 or $\underline{\overset{8}{2}}$. What is the product of $\underline{\overset{8}{2}}$?

Copy these multiplication examples and write the products. Look at the table if you have to.

	a	b	c	d	e	f	g	h
4.	5	2	9	2	3	7	2	2
	$\underline{2}$	$\underline{3}$	$\underline{2}$	$\underline{6}$	$\underline{2}$	$\underline{2}$	$\underline{8}$	$\underline{4}$
5.	6	2	2	2	2	1	4	8
	$\underline{2}$	$\underline{7}$	$\underline{9}$	$\underline{2}$	$\underline{5}$	$\underline{2}$	$\underline{2}$	$\underline{2}$

6. Write a multiplication fact using the three numbers 2, 8, and 16.

7. Write a multiplication fact using 2 and 5.

8. Write a multiplication fact using 2 and 9.

9. The multiplication fact $2 \times 8 = 16$ belongs with the fact $8 \times 2 = 16$. Write the fact that belongs with $2 \times 6 = 12$.

10. Write the fact that belongs with $2 \times 1 = 2$.

11. Write the fact that belongs with $4 \times 2 = 8$.

Using Multiplication With 2's

1	2	3	4	5	6	7	8	9
2	2	2	2	2	2	2	2	2
2	4	6	8	10	12	14	16	18
2	2	2	2	2	2	2	2	2
1	2	3	4	5	6	7	8	9
2	4	6	8	10	12	14	16	18

The table above shows all the multiplication facts for 2. Learn these facts as soon as you can, so that you can stop looking at the table.

In the problems on these two pages, use the table only when you need to. Write your answers on another paper.

1. Ann's mother is going to knit two pairs of mittens for Ann. How many mittens must Ann's mother knit?

2. Four animal crackers cost one cent. How many crackers can Sue buy for 2¢?

3. Barbara is going to buy 3 cookies costing 2¢ each. How much will Barbara pay for the cookies?

4. Bill has 2 fleets of toy trucks. There are 6 trucks in each fleet. How many trucks does Bill own?

Multiplication Problems With 2's

Use the table on page 134 only if you have to. Write your answers on another paper.

1. Our third grade is learning a folk dance. Six pairs of children are in the dance. How many children in all are dancing?

2. Bob sold a half dozen eggs to his mother and another half dozen to his aunt. How many eggs did he sell in all?

3. Linda's mother buys 2 quarts of milk a day for her family. How many quarts does she buy a week?

4. Bill bought a nickel's worth of little marbles. He got 2 marbles for a penny. How many marbles did Bill get for his nickel?

5. Jerry bought 2 stamps for his stamp book. They cost 9 cents each. How much did he pay for the two?

6. Our school bought two 5-pound cans of hard candy for the picnic. How many pounds did we buy?

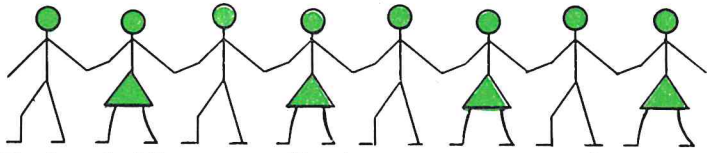
7. On a trip, Jean mailed 8 cards to her friends. She put a 2-cent stamp on each card. How much did the stamps cost?

8. In the circus parade Joe saw a bandwagon drawn by 3 pairs of white horses. How many horses were pulling the wagon?

9. Their father bought Jean and Tony each a 7-cent popsicle. How much did he pay for both of them?

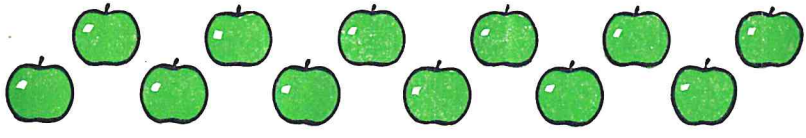
Can You Divide?

÷ means divided by.



1. Eight children in Ellen's room are going to be in a folk dance. How many pairs of dancers will 8 children make?

You could get the answer by subtracting 2 (one pair) from 8, then 2 (another pair) from 6, then 2 from 4. A **shorter** way is to **divide** 8 by 2. 8 divided by 2 is written $8 \div 2$.



2. Don brought 12 apples to school to give to Sam and Dick. He wanted to divide them equally between the two boys. Each boy would get half of the apples.

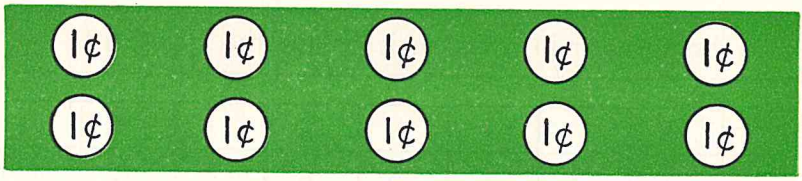
Draw a picture of 12 apples on another paper. Put a check mark ($\surd$) on every second apple. How many apples would each boy get? $12 \div 2 = ?$

Finding one half ($\frac{1}{2}$) of a number is the same as dividing by 2.

3. How many cents equal half a dime? $10 \div 2 = ?$

4. Half of six jacks is how many jacks? $6 \div 2 = ?$

More About Dividing



1. Jean wants to buy some 5-cent pencils. She has 10 cents.

Draw a picture of 10 pennies like the picture above. Draw a line around each 5 pennies in your picture. How many pencils can Jean buy for 10¢?

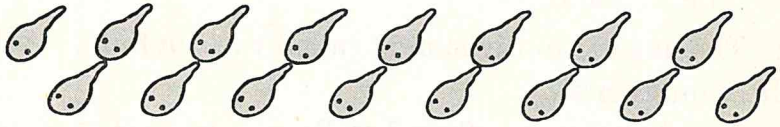
$$10¢ \div 5¢ = ?¢$$

How many 2-cent pencils could Jean buy for 10¢?

$$10¢ \div 2¢ = ?¢$$

These division facts belong together:

$$10 \div 2 = 5 \qquad 10 \div 5 = 2$$



2. Sam caught 16 tadpoles. If he puts them equally into 2 jars, how many tadpoles will there be in each jar? $16 \div 2 = ?$

If he divides the tadpoles equally among 8 jars, how many tadpoles will then be in each jar? $16 \div 8 = ?$

These division facts belong together:

$$16 \div 2 = 8 \qquad 16 \div 8 = 2$$

3. $8 \div 2 = 4$, so $8 \div 4 =$ what number?

4. $18 \div 2 = 9$, so $18 \div 9 =$ what number?

5. What other division fact belongs with $14 \div 2 = 7$?

Using a Division Table

The answer in division is called the **quotient.**

	1		2		3		4	
1	2	3	4	5	6	7	8	9
5		6		7		8		9
10	11	12	13	14	15	16	17	18

1. The number table above is like the table on page 132. You can use it to find division facts as well as multiplication facts about 2. The 3 over the brown 6 shows that there are three 2's in 6, so $6 \div 2 = 3$. What fact about dividing by 2 does each of these brown numbers show: the 14? the 18? the 10? the 16? the 12? the 2? the 8?

2. The answer in division is called the **quotient.** Tell these quotients:

$2 \div 2 = ?$	$8 \div 2 = ?$	$14 \div 2 = ?$
$4 \div 2 = ?$	$10 \div 2 = ?$	$16 \div 2 = ?$
$6 \div 2 = ?$	$12 \div 2 = ?$	$18 \div 2 = ?$

3. Look at the brown 8 in the table. It shows that 8 divided by 2 is 4, and also that 8 divided by 4 is 2. The 10 also shows two division facts:

$$10 \div 2 = 5 \text{ and } 10 \div 5 = 2$$

What two division facts does the 12 show? The 16?

4. Tell the missing numbers.

$6 \div 3 = ?$	$10 \div ? = 2$	$16 \div ? = 2$
$8 \div 4 = ?$	$12 \div ? = 2$	$18 \div ? = 2$

Dividing With 2's

The division example $14 \div 2 = 7$ can also be written $2\overline{)14}\,\overset{7}{}$. The quotient is written above the line, over the figure 4.

Copy these examples and write the quotients. Look at the table on page 138 if you need to.

	a	b	c	d
1.	$2\overline{)2}$	$2\overline{)10}$	$3\overline{)6}$	$2\overline{)8}$
2.	$7\overline{)14}$	$4\overline{)8}$	$2\overline{)18}$	$8\overline{)16}$
3.	$2\overline{)4}$	$2\overline{)16}$	$6\overline{)12}$	$2\overline{)14}$
4.	$2\overline{)6}$	$5\overline{)10}$	$2\overline{)12}$	$9\overline{)18}$

Can you answer these questions?

5. How many 4's in 8?
6. How many 2's in 8?
7. How many 7's in 14?
8. How many 2's in 4?
9. How many 8's in 16?
10. How many 5's in 10?
11. What is $\frac{1}{2}$ of 6?
12. What is $\frac{1}{2}$ of 10?
13. What is $\frac{1}{2}$ of 18?
14. What is $\frac{1}{2}$ of 12?
15. What is $\frac{1}{2}$ of 8?
16. What is $\frac{1}{2}$ of 16?

Copy these examples and write the quotients.

	a	b	c
17.	$8 \div 2 = ?$	$14 \div 2 = ?$	$10 \div 5 = ?$
18.	$6 \div 3 = ?$	$10 \div 2 = ?$	$14 \div 7 = ?$
19.	$12 \div 6 = ?$	$18 \div 2 = ?$	$8 \div 4 = ?$
20.	$4 \div 2 = ?$	$12 \div 2 = ?$	$16 \div 8 = ?$
21.	$18 \div 9 = ?$	$6 \div 2 = ?$	$16 \div 2 = ?$

How Many Groups?

In these problems, you divide to find how many equal groups there are.

1. Ten children are to go on a school trip. Five children can go in one car. How many cars will be needed?

2. Ten children want to take part in a folk dance. How many pairs of dancers will there be?

3. Mother mended 8 stockings. How many pairs of stockings did she mend?

4. Linda has 12¢. She wants to buy apples with the money. If big apples cost 6¢ apiece, how many can she buy?

How Many in a Group?

In the problems below, you divide to find how many things there are in each group.

1. Don has 16 cabbage plants for his garden. He wants to plant them in 2 equal rows. How many plants will there be in each row?

2. Jill has picked 14 roses. She wants to divide them equally between two vases. How many roses should she put in each vase?

3. Ann shared 8 cookies with 3 other girls. How many cookies did each of the four girls get?

4. Jean paid 16¢ for 8 mint candies. How much did each candy cost?

Why Do You Divide?

In each problem, tell why you divide. Do you find how many groups, or how many in each group? Work the problems on another paper.

1. Jean is making valentines. She has 8 hearts. If she puts 2 hearts on each valentine, how many valentines can she make?

2. Ellen has 6 candy hearts. If she shares them with 2 other girls, how many hearts will each girl get?

3. Eighteen boys on the playground divided into teams of 9 boys each. How many teams were there?

4. Nora paid 16 cents for some 2-cent stamps. How many stamps did she buy?

5. Bill bought a bag of little marbles for 6 cents. There are 12 marbles in the bag. How many marbles did Bill get for a cent?

6. Don has 18 sticks of wood to carry to the cellar. If he can carry 2 sticks at a time, how many trips will he make to the cellar?

7. Ann made 6 dresses for her dolls. How many dolls could have 2 dresses each?

8. Dick is making a bird house. He has a board one foot long. If he cuts it in half, how many inches long will each half be?

9. Sally paid 10 cents for 2 apples. How much was this for each apple?

Multiplying and Dividing With 2's

	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18

This table will tell you all the multiplication and division facts about 2. Look at the 12. The 6 above it and the 2 at the left end of the row show there are six 2's in 12 and two 6's in 12. So it tells these four multiplication and division facts that belong together:

$6 \times 2 = 12 \quad 2 \times 6 = 12 \quad 12 \div 2 = 6 \quad 12 \div 6 = 2$

1. In the table, find the product of 2 and 8. It is 16. The table shows that:

$2 \times 8 = 16 \quad 8 \times 2 = ? \quad 16 \div 2 = ? \quad 16 \div 8 = ?$

2. Use the table to find how many 2's there are in 14. How many 7's are in 14? What is the product of 2×7 and 7×2?

Finish these facts that belong together. Tell the missing numbers.

3. $2 \times 3 = ? \quad 3 \times 2 = ? \quad 6 \div 2 = ? \quad 6 \div 3 = ?$

4. $2 \times 9 = ? \quad 9 \times 2 = ? \quad 18 \div 2 = ? \quad 18 \div 9 = ?$

5. $2 \times 5 = ? \quad 5 \times 2 = ? \quad 10 \div 2 = ? \quad 10 \div 5 = ?$

Write the answers to these examples on a paper.

	a	*b*	*c*	*d*
6.	$16 \div 8$	2×7	4×2	$18 \div 2$
7.	2×6	$10 \div 2$	$14 \div 7$	5×2
8.	$2 \div 2$	8×2	$14 \div 2$	$10 \div 5$

Do You Multiply or Divide?

On your paper, write the numbers 1 through 8 to show the problems on this page. After each number, write **M** if you multiply to work that problem. Write **D** if you divide. Then write the answer for the problem.

1. Sue had a pan of muffins. There were 2 rows of muffins, with 4 muffins in each row. How many muffins were in the pan?

2. Don is putting 16 peaches into 2 baskets. He wants the same number of peaches in each basket. How many peaches should he put in each basket?

3. Barbara has 14 cents. How many pears costing 7 cents apiece can she buy?

4. Mother pays Bob 6 cents for each egg he sells her. How much should he get for 2 eggs?

5. Jill wants to share 12 animal crackers equally with Sue. How many crackers should she give Sue?

6. The children in Tom's room go out for fire drill in pairs. There are 9 pairs of children. How many children are there in all?

7. Bob's grandfather lives 4 miles away. If Bob rides his bicycle there and back, how many miles will he ride?

8. It takes Sue 2 minutes to peel one apple. At this rate, how many can she peel in 10 minutes?

Pages 282 and 283 provide enrichment material which can be used after this page.

Twice and Half

To find **twice** a number, **multiply by 2.**
To find **half** a number, **divide by 2.**

In some of these problems, you find twice a number by multiplying by 2. In some problems, you find half a number by dividing by 2.

1. Don picked 8 tomatoes. He gave his mother half of them. How many tomatoes did Don give her?

2. Sam caught a fish 8 inches long. He said the fish that got away was twice as long. How long did he think that fish was?

3. Jill's grandfather lives 14 miles from Jill's house. Her aunt lives 7 miles from Jill's house. Jill says her aunt lives just half as far away as her grandfather. Is Jill's statement right?

4. Measure the rug in this picture. How many inches wide is it? How many inches long?

5. On a paper, draw a picture of another rug that is half as wide and twice as long. How wide should your picture be? How long?

Twice or Half?

For each problem, tell whether you will multiply by 2 or divide by 2. Write the answers on a paper.

1. Ellen is 9 years old. Her cousin is twice as old as she is. How old is her cousin?

2. Dave lives 3 blocks from school. Jim lives twice as far from school as Dave does. How many blocks from school does Jim live?

3. Dick has a board 18 inches long. He wants to cut it in halves. How long will each half be?

4. There are 10 children in Ann's reading group. Half the children are boys. How many boys are there in the group? How many girls?

5. Dave can get a small toy truck for 9 cents. The clerk said a larger truck would cost twice as much. How much would the larger truck cost?

6. Mother bought a dozen lemons. She told Sue she could have half of them to make lemonade. How many lemons may Sue take? How many lemons would be left?

7. Jill is 8 years old. Her oldest sister is 16 years old.

(a) Is Jill half as old as her sister? How do you find out?

(b) Is Jill's sister twice as old as Jill? How do you find out?

Pages 284 and 285 provide enrichment material which can be used after this page.

Quickies

The problems on this page are quickies. Don't use a pencil to work them. Just tell the answers.

1. We had 6 kittens and gave away 2 of them. How many kittens did we keep?

2. Linda had 8 socks in the wash. How many pairs of socks is this?

3. Jean bought an eraser for 6 cents. She gave the clerk a dime. How many cents should she get in change?

4. The teacher asked Tom to give out 2 sheets of paper to each child in his group. There are 8 children. How many sheets of paper will Tom need?

5. Mary is 10 years old. Her little brother is only 2 years old. How much younger than Mary is he? Mary is how many years older than he?

6. Bill has 7 green marbles and 8 red marbles in his pocket. How many marbles does he have?

7. Sue has made 12 sandwiches for our picnic. If she wraps two sandwiches in each bag, how many bags will she need?

8. How much must Jerry pay for two 6-cent candy bars?

9. Sam had 8 goldfish. He bought 4 more. How many goldfish has he in all?

10. Bill wants to buy a 10-cent bag of marbles. He has 8 cents. How much more money does he need?

Arithmetic Signs and Words

See how many arithmetic signs and words you remember.

1. Tell what sign is missing in each of these examples.
13 ? 6 = 7 16 ? 2 = 8 7 ? 2 = 14 8 ? 8 = 16

2. What is the *difference* between 8 and 2?

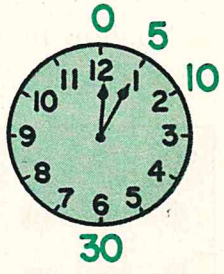
3. What is the *product* of 8 and 2?

4. What is the *sum* of 8 and 2?

5. What is the *quotient* of 8 ÷ 2?

Counting by 5's

1. On a clock face, each space between two numbers stands for 5 minutes. Draw a clock face like that at the right. Write the rest of the 5's from 0 to 30.



2. When the long hand points to 4, how many minutes after 12 o'clock is it?

3. When the long hand points to 5, how many minutes past 12 is it?

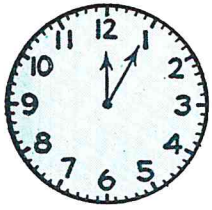
4. To what number does the long hand point at 15 minutes past the hour? At 5 minutes past? At 10 minutes past?

5. Half past 12 is how many minutes after 12?

6. What time is it when the long hand points to 2 and the short hand is between 7 and 8?

Multiplying With 5's

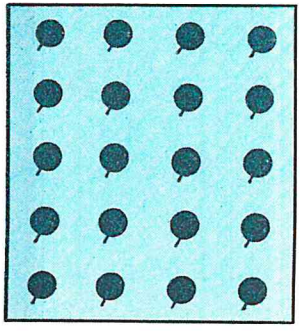
1. You have already done some multiplying with 5's. You know that 2 nickels are worth one dime. So two 5's = what number? You know that 5 nickels are worth a quarter. So five 5's = what number?



2. When the long hand on the clock points to 1, you know it is 5 minutes after the hour. When the hand points to 2, it is how many minutes after the hour?

When the long hand points to 3, it is how many minutes past the hour? How many when it points to 4? When it points to 5? When it points to 6?

So, how many is one 5? Two 5's? Three 5's? Four 5's? Five 5's? Six 5's?



3. Jean bought this card of thumbtacks. Count the thumbtacks row by row. There are 5 rows, with 4 tacks in each row. Five 4's are 20.

$5 \times 4 = 20$

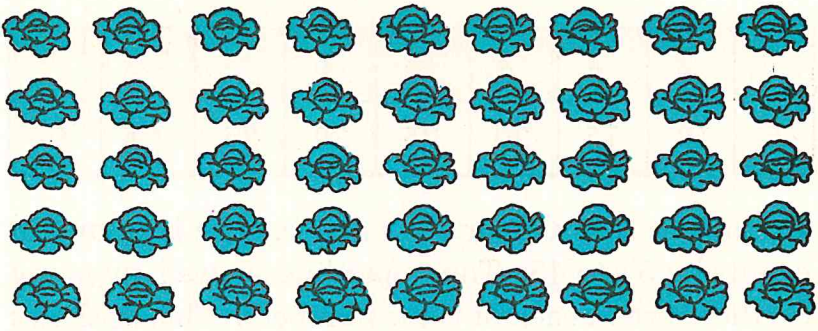
Now count the tacks by columns. There are 4 columns, with 5 tacks in each column. $4 \times 5 = 20$.

$\begin{array}{r} 4 \\ 5 \\ \hline 20 \end{array}$
$\begin{array}{r} 5 \\ 4 \\ \hline 20 \end{array}$

These two facts belong together:

$5 \times 4 = 20$ $\qquad$ $4 \times 5 = 20$

More About 5's



1. Don set out these cabbage plants. Count the plants row by row. How many rows are there? How many plants are in each row? Five 9's are 45. $5 \times 9 = 45$.

Now count the plants by columns. How many columns are there? How many plants in each column? Nine 5's are 45. $9 \times 5 = 45$. These facts belong together:

$$5 \times 9 = 45 \qquad 9 \times 5 = 45$$

9
5
45

5
9
45

2. Jerry bought 5 rows of stamps with 7 stamps in each row. Draw the stamps. Count the stamps by 7's. Five 7's are 35. Count the stamps by 5's. Seven 5's are 35. These facts belong together:

$$5 \times 7 = 35 \qquad 7 \times 5 = 35$$

3. Sally is putting some of her button collection on a card for the hobby show. She has 40 buttons. She wants to put them in 5 rows. Draw the buttons like this: ⊙ . This shows that:

$$5 \times 8 = 40 \qquad 8 \times 5 = 40$$

Pages 286 and 287 provide enrichment material which can be used after this page.

Using a Table of 5's

1	2	3	4	5	6	7	8	9
5	10	15	20	25	30	35	40	45

1. Look at the number table above. The bottom line counts by 5's to 45. The upper line shows how many 5's there are in each of these numbers. The 35 shows that there are seven 5's in 35, so $7 \times 5 = 35$. What number in the bottom line shows three 5's? Eight 5's? Nine 5's? Five 5's? Two 5's? One 5?

2. The 35 in the table also shows that five 7's are 35, so $5 \times 7 = 35$. What number in the bottom line shows five 3's? Five 6's? Five 1's? Five 8's? Five 2's? Five 9's? Five 4's?

3. The 35 shows two multiplication facts that belong together. It shows that $5 \times 7 = 35$ and $7 \times 5 = 35$. What two multiplication facts does 20 show? What two facts does 40 show? The 5 on the bottom line shows what two facts? The 45? The 10? The 30?

Finish these facts that belong together.

	a		*b*	
4.	$2 \times 5 = ?$	$5 \times 2 = ?$	$1 \times 5 = ?$	$5 \times 1 = ?$
5.	$7 \times 5 = ?$	$5 \times 7 = ?$	$8 \times 5 = ?$	$5 \times 8 = ?$
6.	$4 \times 5 = ?$	$5 \times 4 = ?$	$3 \times 5 = ?$	$5 \times 3 = ?$
7.	$9 \times 5 = ?$	$5 \times 9 = ?$	$6 \times 5 = ?$	$5 \times 6 = ?$

Can You Multiply with 5's?

1	2	3	4	5	6	7	8	9
5	5	5	5	5	5	5	5	5
5	10	15	20	25	30	35	40	45
5	5	5	5	5	5	5	5	5
1	2	3	4	5	6	7	8	9
5	10	15	20	25	30	35	40	45

Here is another table that shows the multiplication facts about 5. It shows that five 1's are 5, and one 5 is 5, and so on.

Learn these facts as soon as you can. Use the table only when you have to.

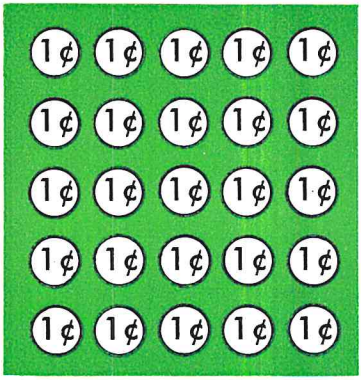
Write the products on another paper.

	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*
1.	4 × 5 = ?	7 × 2 = ?	5 × 6 = ?	2 × 4 = ?	2 × 2 = ?	2 × 5 = ?	9 × 5 = ?	9 × 2 = ?
2.	6 × 5 = ?	4 × 2 = ?	3 × 5 = ?	5 × 9 = ?	5 × 5 = ?	2 × 6 = ?	5 × 7 = ?	3 × 2 = ?

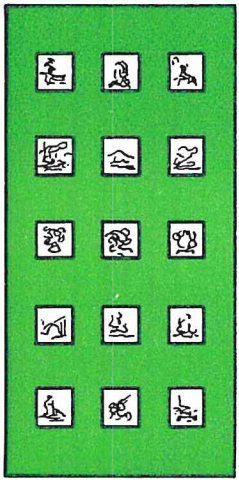
Copy and finish these multiplication facts.

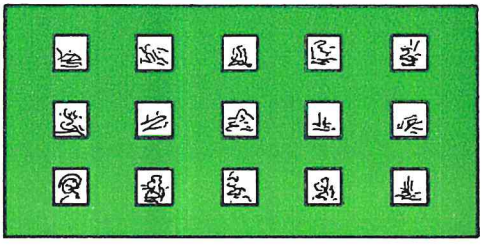
	a	*b*	*c*	*d*
3.	5 × 4 = ?	5 × 8 = ?	2 × 5 = ?	5 × 6 = ?
4.	9 × 5 = ?	3 × 5 = ?	5 × 7 = ?	5 × 5 = ?
5.	5 × 1 = ?	7 × 5 = ?	4 × 5 = ?	5 × 2 = ?
6.	5 × 3 = ?	8 × 5 = ?	5 × 9 = ?	6 × 5 = ?

Dividing With 5's



1. Ellen's father gives her all his pennies when he comes home. Ellen has 25 pennies. She wants to change them into nickels for her nickel bank. How many 5's are in the picture? How many nickels will Ellen have? $25 \div 5 = 5$.





2. Jean is putting 15 pictures on a large piece of cardboard for an exhibit. She can put the pictures on the cardboard in two ways.

How many rows of pictures will Jean have if she puts 3 pictures in each row?

$$15 \div 3 = 5$$

How many rows will there be if Jean decides to put 5 pictures in each row? $15 \div 5 = 3$.

These two division facts belong together:

$$15 \div 3 = 5 \qquad 15 \div 5 = 3$$

More Division With 5's

1. Jerry has 45 stamps that he wants to sell. He is going to put them in packets. If he puts 5 stamps in each packet, how many packets will he have?

$$45 \div 5 = 9$$

If Jerry puts 9 stamps in each packet, how many packets will he have? $45 \div 9 = 5$.

What two facts belong together?

2. Bob has 30 carrots to sell in bunches. If he put 5 carrots in each bunch, how many bunches will he have? $30 \div 5 = 6$.

If he puts 6 carrots in each bunch, how many bunches will he have? $30 \div 6 = 5$.

What two facts belong together?

3. Finish these facts that belong together.

$10 \div 5 = 2$, so $10 \div 2 = ?$
$20 = 4 \times 5$, so $20 \div 5 = ?$, and $20 \div 4 = ?$
$40 = 8 \times 5$, so $40 \div 5 = ?$, and $40 \div 8 = ?$
$35 = 7 \times 5$, so $35 \div 5 = ?$, and $35 \div 7 = ?$
$5 = 5 \times 1$, so $5 \div 5 = ?$, and $5 \div 1 = ?$

4. Copy this table of the division facts for 5 and finish it by writing the quotients.

$\frac{?}{5)5}$	$\frac{?}{5)10}$	$\frac{?}{5)15}$	$\frac{?}{5)20}$	$\frac{?}{5)25}$	$\frac{?}{5)30}$	$\frac{?}{5)35}$	$\frac{?}{5)40}$	$\frac{?}{5)45}$
$\frac{?}{1)5}$	$\frac{?}{2)10}$	$\frac{?}{3)15}$	$\frac{?}{4)20}$	$\frac{?}{5)25}$	$\frac{?}{6)30}$	$\frac{?}{7)35}$	$\frac{?}{8)40}$	$\frac{?}{9)45}$

Multiplying and Dividing With 5's

	1	2	3	4	5	6	7	8	9
5	5	10	15	20	25	30	35	40	45

You can use this table to find the multiplication and division facts about 5. Look at 35. The 7 above it, and the 5 at the end of the row show that:

$5 \times 7 = 35 \quad 7 \times 5 = 35 \quad 35 \div 5 = 7 \quad 35 \div 7 = 5$

1. In the table, find the product of 5 and 3. It is 15. The table shows:

$5 \times 3 = 15 \quad 3 \times 5 = ? \quad 15 \div 5 = ? \quad 15 \div 3 = ?$

2. Use the table to find how many 5's there are in 30. How many 6's are in 30? What is the product of 5×6 and 6×5?

A fifth of something is one of 5 equal parts of that thing. A nickel is a fifth of a quarter, because $25¢ \div 5 = 5¢$. A fifth of 35 children is 7 children, because $35 \div 5 = 7$.

To find one fifth ($\frac{1}{5}$) of a number, divide by 5.

Write the answers on another paper. Use the table only if necessary.

	a	*b*	*c*	*d*
3.	$\frac{1}{5}$ of 40	4×5	$15 \div 3$	7×5
4.	9×5	$\frac{1}{5}$ of 25	5×3	$30 \div 5$
5.	$\frac{1}{5}$ of 35	$20 \div 5$	5×8	$35 \div 7$
6.	$40 \div 5$	6×5	$\frac{1}{5}$ of 10	$45 \div 5$

Do You Multiply or Divide?

On a paper, write the numbers 1 to 8 to show these problems. After each number, write **M** if you multiply to work that problem. Write **D** if you divide. Then write the answer to the problem.

1. Ellen bought 6 candles for her party. They cost 5¢ each. How much did she pay?

2. Five girls went on a picnic. They had 25 little sandwiches and shared them equally. How many sandwiches did each girl have?

3. Jill planted 2 rows of pansy plants, with 5 plants in each row. How many plants did she set out?

4. If fish hooks are 5¢ each, how many can Sam get for 20¢?

5. Don gets 5¢ a day for taking the ashes out of the furnace. How much does he earn a week?

6. Sally has some ribbon 45 in. long. She wants to cut it into 5 equal pieces for doll hair ribbons. How long should each piece be?

7. Tom and Bill made some lemonade. They sold it for 5 cents a glass. They took in 35 cents. How many glasses did they sell?

8. Mother made 40 cookies. She told Ellen she might have $\frac{1}{5}$ of them for her party. How many cookies did Ellen get?

Pages 288 and 289 provide enrichment material which can be used after this page.

Do You Remember How To Add?

The examples on this page will show you how well you remember the addition you have had. Copy the examples and write the sums.

	a	b	c	d	e	f
1.	32 7	52 12	17 8	74 6	29 5	19 8
2.	51 39	63 29	39 57	\$ .45 .29	\$ .25 .08	\$ .47 .38
3.	5 1 3	3 4 8	2 7 5	9 4 2	21 34 13	10 42 46

	a	b	c	d	e
4.	240 550	36 93	42 165	671 208	175 80
5.	356 418	358 627	194 576	447 243	738 237
6.	268 392	164 449	526 385	439 392	156 689
7.	\$ .83 .75	\$1.35 2.03	\$2.90 6.10	\$3.58 .71	\$4.46 1.56

	a	b	c
8.	126 + 74	68 + 269	583 + 246
9.	\$1.65 + 78¢	\$6.40 + \$1.95	99¢ + \$2.21
10.	\$4.95 + \$3.70	\$5.46 + \$3.58	77¢ + \$4.23

Do You Remember How To Subtract?

These examples will help you remember what you have learned about subtraction. Copy the examples, subtract, and check by adding.

	a	*b*	*c*	*d*	*e*	*f*
1.	17 3	46 10	97 27	105 64	145 53	189 90
2.	62 18	31 19	63 57	77 49	138 48	114 88

	a	*b*	*c*	*d*	*e*
3.	827 501	683 203	618 516	392 145	681 367
4.	872 264	793 276	529 493	866 129	964 506
5.	507 245	904 720	780 403	329 268	810 640
6.	835 438	925 327	853 295	800 569	775 189
7.	\$7.80 4.30	\$1.25 .36	\$2.39 .94	\$4.06 2.17	\$5.00 3.75
8.	\$7.08 2.59	\$8.61 3.76	\$9.93 4.86	\$8.27 6.24	\$7.01 6.07

	a	*b*	*c*
9.	108 — 43	364 — 90	180 — 108
10.	\$5 — \$4.27	\$1.20 — 69¢	\$6.28 — \$5.90
11.	\$9.07 — \$2.48	\$4.22 — \$2.03	\$9 — \$7.99

Adding and Subtracting Money

On your paper, write the numbers 1 to 8 to show these problems. After each number write **A** if you add to work that problem. Write **S** if you subtract. Then write the answer to the problem.

1. Don had $3.75. He sold some tomatoes for 75¢. Then how much money did Don have?

2. Tony had $7.48 in his bank. He gave 50¢ to the Red Cross. How much money did Tony have left?

3. Sue and Bob are saving money for a sled. Sue has saved $1.59 and Bob has saved $1.43. How much have they both saved?

4. Bill wants a hockey stick costing 95¢ and a skating cap costing $1.10. How much will both things cost?

5. Ann wants a play stove costing $3.25. She has $2.39. How much more money does she need?

6. Dick made a bird house. He sold it for $1.50. He spent 79¢ for the wood and other things he used. How much money did he make?

7. The children are giving a play. The boys have sold $1.35 worth of tickets. The girls have sold $1.65 worth of tickets. How much money have they all taken in for tickets?

8. We bought two watermelons for our picnic. The large watermelon cost $1.30. The small watermelon cost 75¢. How much did both watermelons cost?

Buying Things at the Store

In some of these problems you add, and in some problems you subtract. Tell why you add or subtract. Work the problems on another paper.

1. Jerry bought 66 cents' worth of stamps for his stamp collection. He gave the clerk a dollar. How much money did he get back?

2. Peggy bought some roller skates for $3.98 and a sweater for $3.79. How much did both cost?

3. Dick earned 95¢ and spent 69¢ of it for a belt. How much money did he have left?

4. Mother paid $2.86 for a sweater for Sue and $1.98 for a sweater for Bob. What was the total cost of the sweaters?

5. Ann is saving money for a doll house that costs $6.85. She has saved $5.60. How much more money does she need?

6. Jill wants to buy a new hat. One hat that she likes costs $2.98. Another hat is marked $3.50. How much less does the $2.98 hat cost?

7. Tom bought a game costing $1.49. He gave the clerk $2.00. How much change did he get?

8. Nora wants to buy two books. One book costs $2.50. The other book costs 96¢. How much money will she need to buy both books?

Look over your answers. Are all your answers reasonable? Do they make sense?

Can You Make Up Problems?

See if you can make up some quickies. You are to think of numbers that will finish each problem. Read your problems to the other children. They will tell you whether you added or subtracted and whether your numbers are right.

1. Sam is 9 years old. Henry is **?** years older than Sam, so Henry is **?** years old.

2. Sixteen children are playing tag. **?** of them are boys and **?** are girls.

3. Jean has 9¢. She wants to buy some crayons that cost **?**¢. She needs **?**¢ more.

4. Sam caught **?** fish. His father caught 7 fish. They caught **?** fish together.

5. Peggy had 15 cents. She spent **?** cents for a rubber ball and had **?** cents left.

6. Bill has 6 marbles in one pocket and **?** marbles in another pocket. He has **?** marbles in both pockets.

7. Jill picked **?** red roses and 10 white roses. She picked **?** roses in all.

8. Jean wants to make **?** valentines. She has made 5. She must make **?** more.

9. Ellen had 13 mints. She gave **?** to Jean and had **?** left.

10. Jim has 5 toy airplanes. Dave has **?** toy airplanes. Dave has **?** more airplanes than Jim.

Thinking About Numbers

These questions are about the arithmetic you have already had. Can you tell the answers?

1. What number is 6 more than 8?
2. What number is half of 14?
3. What coin is worth twice as much as a nickel?
4. How many inches long is a board that is 1 foot and 3 inches long?
5. Which is more, a dime or 8 pennies?
6. What number comes just before 80?
7. What number comes just after 100?
8. What number is 5 less than 15?
9. Which number is larger, 49 or 61?
10. What number means 8 tens and 3 ones?
11. A foot is how many inches longer than 9 in.?
12. What numbers do you add to check $13 - 7 = 6$?
13. How many minutes are there in half an hour?
14. How many minutes in a quarter hour?
15. How many quarters make a dollar?
16. How many dimes are there in one dollar?
17. How many 5's are there in 40?
18. What division fact belongs with $5 \times 5 = 25$?
19. What sign is missing in $35 \; ? \; 5 = 7$?
20. Which is longer, a yard or 40 inches? How much?
21. Nine eggs are how many less than a dozen eggs?
22. What is the largest 2-figure number you can make with two different figures?

Multiplying Larger Numbers

12	
12	
24	

tens	ones
1	2
	2
2	4

1. The children had two dozen rolls for their hot dog roast. How many are two dozen? To find out, you can add 12 and 12. Or you can multiply 12 by 2.

In the upper box, 12 and 12 are added.

In the lower box, 12 is multiplied by 2. You start at the ones place. Then you multiply the tens.

You get the same answer both ways.

Copy these examples and write the products.

	a	*b*	*c*	*d*	e	*f*
2.	13 × 2	11 × 2	14 × 2	32 × 2	23 × 2	44 × 2
3.	21 × 2	11 × 5	34 × 2	42 × 2	43 × 2	24 × 2

Multiplication With Larger Numbers

1. The boys are arranging chairs for a play. They are to have 5 rows of chairs, with 21 chairs in each row. To find how many chairs they will need, you multiply 21 by 5. Start with the ones. Then multiply the tens. 5×2 tens $= 10$ tens. Ten 10's make 100, so you write 0 in the tens place and put the 1 in the hundreds place.

How many chairs did the boys need?

hundreds	tens	ones
	2	1
		5
1	0	5

2. Tony and Jean drove with their parents to the mountains. It was 134 miles from their home to the mountains. To find how far it was there and back, multiply 134 by 2. You start with the ones.

How many miles did they drive?

hundreds	tens	ones
1	3	4
		2
2	6	8

Copy and multiply.

	a	b	c	d	e	f
3.	63 × 2	94 × 2	31 × 5	51 × 2	83 × 2	53 × 2
4.	72 × 2	54 × 2	61 × 5	84 × 2	91 × 5	41 × 5
5.	223 × 2	111 × 5	431 × 2	142 × 2	334 × 2	124 × 2

	a	b	c	d
6.	5×61	2×93	5×81	2×243

Pages 290 and 291 provide enrichment material which can be used after this page.

Dividing Larger Numbers

	dimes	cents
	2	4
2)	4	8

1. Sue and Bob bought some valentines for 48 cents. They divided the cost equally. How much did each one have to pay?

Each one should pay $\frac{1}{2}$ the cost, so you divide 48 cents by 2. Forty-eight cents is the same as 4 dimes and 8 cents.

In dividing, always *start at the left.*

First, you find half of 4 dimes.

4 dimes ÷ 2 = 2 dimes

Put the 2 in the dimes column, above the 4.

Then find half the cents. 8 cents ÷ 2 = 4 cents. Write the 4 in the cents column above the 8. How much did each child pay?

Copy these examples and write the quotients. Tell how many dimes and cents each quotient would be.

	a	*b*	*c*	*d*	*e*
2.	$2\overline{)64}$	$2\overline{)82}$	$5\overline{)55}$	$2\overline{)28}$	$2\overline{)46}$
3.	$2\overline{)24}$	$2\overline{)42}$	$2\overline{)88}$	$2\overline{)66}$	$2\overline{)84}$
4.	$2\overline{)22}$	$2\overline{)68}$	$2\overline{)26}$	$2\overline{)86}$	$2\overline{)62}$

Quickies

Do these problems in your head. Just write the answers on another paper.

1. Bill played 10 games of marbles. He won half of them. How many games did he win?

2. On one page of Jerry's stamp book, there are 5 rows of stamps. There are 9 stamps in each row. How many stamps are there on the page?

3. Sam sells 2 fishing worms for a cent. How many worms should he give for a nickel?

4. How much will 5 lollipops cost at 5 cents each?

5. Linda spent 2 weeks in the country. How many days did she stay in the country?

6. Sue has 12 slices of bread. One sandwich takes 2 slices. How many sandwiches can Sue make?

7. Bill went to the store with 15¢. He came back with 12¢. How many cents had he spent in the store?

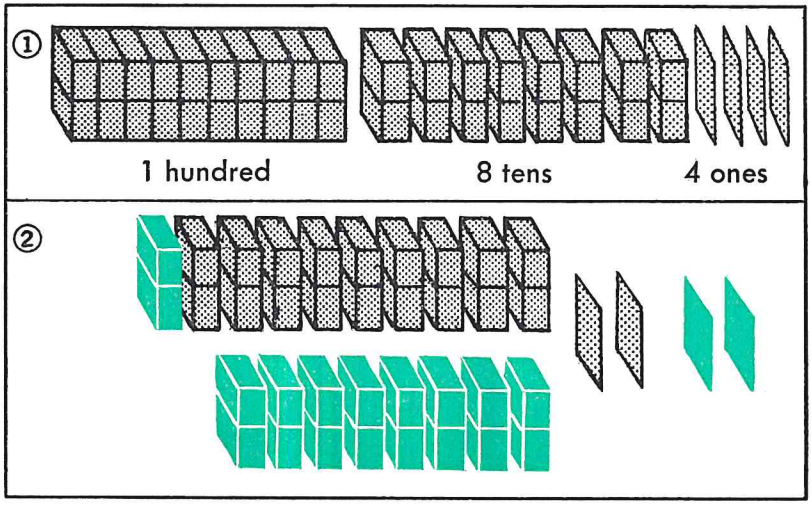
8. Dick has a board 1 foot and 5 inches long. How many inches long is it?

9. Eight boys are pairing off to play catch. How many pairs of boys will there be?

10. Mother baked 20 cupcakes. She said the boys could have $\frac{1}{5}$ of them. How many cakes could the boys have?

11. Sally bought a puzzle costing 9 cents. How much change should she get from a dime?

Can You Divide Hundreds?



1. The third-grade girls and boys sold 184 tickets to the school show. The boys sold $\frac{1}{2}$ of the tickets. How many tickets did the boys sell?

Look at the two boxes above. The top box shows how you can think of the 184 tickets as a bundle of 1 hundred, 8 bundles of tens, and 4 ones.

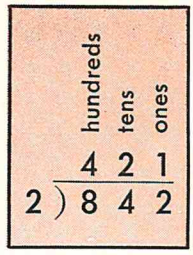
The lower box shows how the tickets are divided by 2. Half of the tickets are colored.

	hundreds	tens	ones
		9	2
2)	1	8	4

There was only one bundle of hundreds, so the hundred bundle is broken into 10 tens. 10 tens and 8 tens are 18 tens. Divide 18 tens by 2 and write the 9 in the tens column over the 8. Then you divide the 4 ones by 2.

How many tickets to the show did the boys sell?

2. In all, 842 tickets were sold. Half were for the first night of the show. Half were for the second night. How many people came to the show each night?



Here, you have 8 hundreds, 4 tens, and 2 ones. Start at the left to divide. $8 \div 2 = 4$. Write 4 in the hundreds column. Next, divide the tens. $4 \div 2 = 2$. Write 2 in the tens column. Now divide the ones. 421 people came each night.

3. When you divide 205 by 5, where do you write the first figure of the quotient? Why? What is the quotient in this example?

Copy these examples and write the quotients. Be sure to write each figure of the answer in the column where it belongs.

	a	*b*	*c*	*d*
4.	$2\overline{)108}$	$5\overline{)155}$	$2\overline{)126}$	$5\overline{)355}$
5.	$5\overline{)455}$	$2\overline{)182}$	$5\overline{)305}$	$5\overline{)255}$
6.	$2\overline{)262}$	$5\overline{)555}$	$2\overline{)646}$	$2\overline{)242}$
7.	$2\overline{)188}$	$5\overline{)405}$	$2\overline{)144}$	$2\overline{)868}$
8.	$2\overline{)486}$	$2\overline{)888}$	$2\overline{)682}$	$2\overline{)102}$
9.	$5\overline{)205}$	$2\overline{)166}$	$2\overline{)148}$	$5\overline{)105}$
10.	$2\overline{)282}$	$2\overline{)222}$	$2\overline{)106}$	$2\overline{)124}$
11.	$164 \div 2$	$186 \div 2$	$168 \div 2$	$146 \div 2$
12.	$666 \div 2$	$142 \div 2$	$122 \div 2$	$244 \div 2$

Using Zero in Multiplication

$$\begin{array}{r} 10 \\ \times\ 5 \\ \hline 50 \end{array}$$

1. You have already multiplied with zero. You know that 5 dimes are worth 50 cents.

$$5 \times 10 = 50$$

This example is written in the box at the left. You can see that $5 \times 0 = 0$ and $5 \times 1 = 5$.

How many cents are 2 dimes worth? Then what is the product of 2×0?

Zero multiplied by any number is 0.

$$\begin{array}{r} 40 \\ \times\ 5 \\ \hline 200 \end{array}$$

2. Five buses carry children to Nora's school. Each bus holds 40 children. To find how many children all 5 buses can carry, multiply 40 by 5.

$$5 \times 0 = 0, \text{ and } 5 \times 4 = 20$$

How many children can the 5 buses carry?

Copy these examples and multiply.

	a	*b*	*c*	*d*	*e*	*f*
3.	$\begin{array}{r} 20 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ \times\ 2 \\ \hline \end{array}$
4.	$\begin{array}{r} 50 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ \times\ 5 \\ \hline \end{array}$
5.	$\begin{array}{r} 101 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 230 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 100 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 300 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 340 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 303 \\ \times\ 2 \\ \hline \end{array}$
6.	$\begin{array}{r} 104 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 110 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 302 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ \times\ 5 \\ \hline \end{array}$

	a	*b*	*c*	*d*
7.	5×10	2×360	5×60	2×204

Using Zero in Division

1. Ellen's father paid 50¢ for 5 tickets for the pony ride. To find how much each ticket cost, divide 50¢ by 5. Start at the left. $5 \div 5 = 1$. $0 \div 5 = 0$. Where is the zero in the answer written?

$$5\overline{)50}\quad 10$$

How much did each ticket cost?

2. Dave has 140 rocks in his rock collection. He wants to put them in 2 trays, with the same number in each tray. To find how many rocks go in each tray, divide 140 by 2.

$$2\overline{)140}\quad 70$$

The 1 is smaller than the 2, so you divide 14 by 2. 14 tens $\div$ 2 = 7 tens. Then divide the ones.

$$0 \div 2 = 0$$

How many rocks go in each tray?

Zero divided by any number is 0.

Copy these examples and write the quotients.

	a	*b*	*c*	*d*
3.	$2\overline{)80}$	$2\overline{)40}$	$2\overline{)120}$	$2\overline{)160}$
4.	$5\overline{)150}$	$5\overline{)350}$	$5\overline{)200}$	$5\overline{)100}$
5.	$2\overline{)100}$	$5\overline{)250}$	$5\overline{)400}$	$2\overline{)180}$
6.	$2\overline{)204}$	$2\overline{)802}$	$5\overline{)505}$	$2\overline{)406}$
7.	$5\overline{)550}$	$2\overline{)460}$	$2\overline{)608}$	$5\overline{)300}$
8.	$\frac{1}{2}$ of 602	$\frac{1}{5}$ of 450	$\frac{1}{5}$ of 305	$\frac{1}{2}$ of 840

Checking Division by Multiplying

The quotient × the divisor = the dividend.

1. Barbara had 15 cents. She spent the money for doughnuts costing 5 cents each. To find how many doughnuts she bought, you divide. Divide 15¢ (the money Barbara spent) by 5¢ (the price of each doughnut). What is the number of doughnuts bought?

3 ← number bought
Price of each doughnut → 5)15 ← money spent

Check

5¢ ← price of each
3 ← number bought
15¢ ← money spent

You can check your work by multiplying. Multiply the price of each doughnut Barbara bought by the number of doughnuts. The product is the money Barbara spent.

2. Sometimes you make mistakes in dividing. You will feel safer if you check your work. Here is a way you can check any division example. Multiply the answer (called the **quotient**), and the number you divide by (called the **divisor**). The product should be the number you divided (called the **dividend**).

In the problem about Barbara, what number is the dividend? What is the divisor? What is the quotient?

3. In $40 \div 5 = 8$, what is the dividend? The divisor? The quotient? How do you check by multiplying?

4. In Bill's school, 164 children wanted to see the puppet show Bill's room was giving. The children were coming in 2 equal groups. To find how many should come each time, divide 164 by 2.

$$2\overline{)164}\quad 82$$

What number is the quotient? What is the divisor? What is the dividend? What two numbers do you multiply to check the work? What should be the product?

Copy the examples below and divide. Then check your work in each example by multiplying the quotient by the divisor. If the product is not the same as the dividend, find your mistake and correct it.

	a	*b*	*c*	*d*
5.	$2\overline{)604}$	$5\overline{)405}$	$2\overline{)104}$	$5\overline{)455}$
6.	$2\overline{)124}$	$2\overline{)128}$	$5\overline{)350}$	$2\overline{)148}$
7.	$5\overline{)305}$	$2\overline{)180}$	$2\overline{)186}$	$5\overline{)505}$
8.	$2\overline{)162}$	$5\overline{)550}$	$5\overline{)250}$	$2\overline{)100}$
9.	$2\overline{)802}$	$2\overline{)166}$	$5\overline{)200}$	$5\overline{)400}$
10.	$5\overline{)205}$	$2\overline{)628}$	$5\overline{)255}$	$2\overline{)102}$
11.	$2\overline{)144}$	$2\overline{)106}$	$5\overline{)155}$	$5\overline{)100}$
12.	$2\overline{)208}$	$5\overline{)300}$	$2\overline{)188}$	$2\overline{)140}$
13.	$5\overline{)150}$	$5\overline{)450}$	$2\overline{)420}$	$2\overline{)120}$

Pages 292 and 293 provide enrichment material which can be used after this page.

Do You Multiply or Divide?

Number your paper for the problems on this page. After each number, write **M** if you multiply in that problem. Write **D** if you divide. Then write the answer to the problem.

1. Don's father wants to set out 48 new trees in his orchard. He will plant them in 2 equal rows. How many trees should he plant in each row?

2. There are 26 children on the playground. If they form into 2 equal groups for a game, how many will be in each group?

3. Jim can get 2 jelly beans for a cent. How many can he get for 12 cents?

4. Uncle Dan has 55 pennies. He will divide them equally among 5 children. How many pennies will each child get?

5. Peggy is a Brownie Scout. Each girl in her troop pays 5¢ a week dues. In 10 weeks, how much must Peggy pay?

6. Jerry has two stamp books. Each has 120 pages. How many pages does Jerry have for his stamps?

7. If I make 2 rows of chairs with 24 chairs in each row, how many chairs will this take?

8. Bob and Sue want to buy 21 whistles for their party. Each whistle costs 5¢. Find how much they must pay for the whistles. Write the answer with a dollar sign and a point.

Which Answer Is Sensible?

There are two answers after each problem. You get one answer if you multiply. You get the other answer if you divide. Only one answer makes sense. Decide which answer is right. Did you multiply or divide to get that answer?

1. The bookcase in Ann's classroom has 5 shelves. Thirty books will fill each shelf. How many books will the 5 shelves hold? (150 or 6)

2. Sam and his family were taking a trip. They drove 84 miles in 2 hours. How many miles an hour were they going? (168 or 42)

3. Ellen bought 2 boxes of cookies for her party. Each box had 24 cookies. How many cookies did she buy? (48 or 12)

4. The boys want to set out 100 chairs in 5 equal rows for a show. How many chairs will there be in each row? (500 or 20)

5. Tom and Bill sold lemonade for 5 cents a glass. They took in 50 cents. How many glasses of lemonade did they sell? (250 or 10)

6. In one of his new stamp books, Jerry can put 30 stamps on a page. How many stamps can he put on 5 pages? (150 or 6)

7. Jean's family is making a 200-mile trip. When they are halfway, they will stop and eat. How many miles must they drive to be halfway? (400 or 100)

Using Measures

Can you do most of these problems in your head?

1. Sally is knitting a scarf 1 yard long. She has knitted 29 inches. How many more inches must she knit to finish the scarf?

2. Tom measured the shadow of a flagpole. At 9 o'clock it was 42 ft. long. At 11 o'clock it was 24 ft. long. How much shorter had it become?

3. It takes Bob 10 minutes to walk from his house to the school bus stop. The bus comes at a quarter past 8. When must Bob start? (You may have to look at a clock.)

4. Ann likes to get to school by 10 minutes of 9. It takes her 15 minutes to walk to school. When should she leave home?

5. At noon, the thermometer said 69° in the shade and 81° in the sun. How many degrees cooler was it in the shade?

6. One winter morning, the thermometer said 8°. How many degrees was this below freezing (32°)?

7. Ann's spring vacation is 1 week and 3 days long. How many days long is her vacation?

8. Sally bought 83 cents' worth of groceries for her mother. She gave the clerk a dollar bill.

(a) How much change should Sally get?

(b) What is the smallest number of coins the clerk could give Sally?

The Months of the Year

A year = 12 months.

1. January
2. February
3. March
4. April
5. May
6. June
7. July
8. August
9. September
10. October
11. November
12. December

1. At the right are the names of the months in order. What is the first month?

2. What is the last month?

3. What is the 7th month?

4. What is the 2nd month?

5. June is the 6th month. Which month is March?

6. Which month is November?

7. How many months make half a year?

8. Christmas is in what month?

9. In what month does Halloween come?

10. In what month does Thanksgiving come?

This verse tells the number of days in the months.

Thirty days have September,
April, June, and November.
All the rest have thirty-one
Except February alone.

11. How many months have 30 days?

12. How many months have 31 days?

13. Find how many days there are in February this year.

Pages 294 and 295 provide enrichment material which can be used after this page.

Can You Handle Numbers?

Diagnostic Check Test 3A

This test will show you how much you have learned about the four processes—addition, subtraction, multiplication, and division. Work carefully. Make sure your answers are right.

Copy and add.

	a	*b*	*c*	*d*	*e*
1.	79 63	306 178	\$ .67 1.75	406 194	578 280

Copy, subtract, and check.

2.	\$1.28 .68	51 44	804 125	\$1.55 .68	\$5.00 1.11

Copy and multiply.

3.	43 2	90 5	72 2	101 5	300 2

Copy, divide, and check.

	a	*b*	*c*	*d*
4.	$2\overline{)82}$	$2\overline{)146}$	$5\overline{)305}$	$5\overline{)450}$

5. Find the sum of \$2.84 and 89¢.

6. Find the difference between 320 and 43.

7. Multiply 54 by 2.

8. Find the quotient of 208 divided by 2.

Copy and work these examples.

9. $45 + 170$ **10.** 5×80 **11.** \$2.75 + 96¢

Do You Understand Numbers?

Diagnostic Check Test 3B

This test will show you how much you understand about the meaning of numbers and number words.

1. Write one hundred twelve in figures.

2. Write the number that means 3 hundreds, no tens, and 7 ones.

3. How many tens are there in 68? How many ones?

4. What number comes just after 509?

5. What day is the 2nd day of the week?

6. Which day of the week is Thursday?

7. How many months are there in a year?

8. A half dollar is worth how many quarters?

9. A dime is worth twice as much as what coin?

10. To check $126 \div 2 = 63$, what two numbers do you multiply?

11. How much are five 7's?

12. How many 9's are there in 18?

13. What number is $\frac{1}{5}$ of 20?

14. Change $2 + 2 + 2 + 2 + 2 + 2$ to a multiplication example.

15. What other multiplication fact belongs with $7 \times 5 = 35$?

16. What is the other division fact that belongs with $12 \div 2 = 6$?

17. Which is longer, 1 yd. or 30 in.?

18. Write the sign that is missing in $6 \; ? \; 5 = 30$.

Can You Use Numbers?

Diagnostic Check Test 3C

This two-page test will show you how well you can use numbers in problems. In some of the problems you add to find the answer. In some problems, you subtract. In some you multiply, and in some you divide. Decide which process you are to use in each problem.

1. One winter morning, the thermometer read 9°. That afternoon, the thermometer said 37°. How many degrees had it warmed up during the day?

2. Linda has gone to the zoo with her father. She has a bag of 35 peanuts to feed the 5 elephants. She wants to divide the peanuts equally. How many should she give to each elephant?

3. Ellen bought 2 boxes of candy for her party. There were 34 pieces of candy in each box. How many pieces of candy did Ellen buy?

4. Last year, Tom was 49 inches tall. This year, he is 52 inches tall. How many inches did he grow during the year?

5. Jim counted the days before his birthday. He found there were 35 days. How many weeks was it before Jim's birthday?

6. Tony and Jean are saving money for their vacation trip. Tony has saved $2.55 and Jean has saved $1.95. How much have they saved in all?

7. Sally likes to play with her Noah's ark on rainy days. There are 24 pairs of animals in the ark. How many animals are there in all?

8. Bill's Cub Scout pack had $8.32. They spent $1.50 for a picnic. How much did they have left?

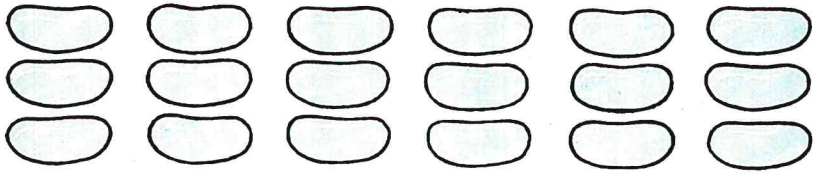
9. Don and his father set out 100 lettuce plants. The rabbits ate all but 15 of them. How many plants did the rabbits eat?

10. Mary collects picture cards. She has put them on 5 large sheets of cardboard. There are 20 cards on each sheet. How many cards has Mary in all?

11. Don's father spent 50¢ on popsicles for the children when they went to the fair. If popsicles are 5¢ each, how many did Don's father buy?

12. Sam had saved $3.80 for a fishing rod. Then he got 75¢ for his birthday. How much money did he have then?

Multiplying With 3's



3	
3	
3	3
3	6
3	18
3	
18	

1. Ann can buy 3 jelly beans for 1 cent. She has 6 cents to spend. How many jelly beans can she buy?

There are six 3's. To find how many beans Ann can buy, you can add the six 3's. Or you can multiply 3 by 6.

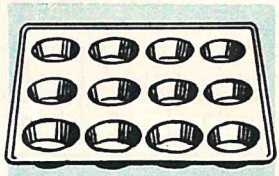
$$6 \times 3 = 18$$

7	3
3	7
21	21

2. Jerry has a set of stamps. There are 3 rows of stamps, with 7 stamps in each row.

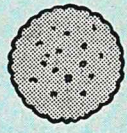
To find how many stamps there are, Jerry can multiply in two ways. He can say 3 (the number of rows) times 7 (the number of stamps in each row) = 21. Or, he can say 7 (the number of columns) times 3 (the number of stamps in each column) = 21. Is the answer the same both ways?

3. Sue's muffin pan holds 3 rows of muffins with 4 muffins in each row. You can find how many muffins the pan holds by multiplying in two ways:



$4 \times 3 = 12$, or $3 \times 4 = 12$

4. Sue helped her mother make some cookies. They baked the cookies in a long pan. They could get 3 rows in the pan, with 8 cookies in each row. On your paper, draw a picture of the cookies in the pan. Tell how these two facts belong together: $3 \times 8 = 24$ and $8 \times 3 = 24$.



5. Don set out 3 rows of celery plants with 9 plants in each row. Draw a picture of the plants to find how many plants Don set out.

$3 \times 9 = 27$ and $9 \times 3 = 27$

6. Sam bought 3 small fishhooks. Each fishhook cost 3 cents. Draw a picture of the pennies to find how much Sam had to pay for the hooks. $3 \times 3 = 9$.

7. You have already had four multiplication facts about 3. Tell the missing numbers:

$2 \times 3 = ?$ $3 \times 2 = ?$ $5 \times 3 = ?$ $3 \times 5 = ?$

8. Copy and finish these facts that belong together.

$6 \times 3 = ?$, so $3 \times 6 = ?$ $3 \times 9 = ?$, so $? \times 3 = 27$

$3 \times 7 = ?$, so $7 \times 3 = ?$ $8 \times 3 = ?$, so $? \times ? = 24$

Using a Number Table of 3's

		1			2			3
1	2	3	4	5	6	7	8	9
		4			5			6
10	11	12	13	14	15	16	17	18
		7			8			9
19	20	21	22	23	24	25	26	27

1. Can you count by 3's? In the table above, each number you use in counting by 3's is printed in color. The figure "1" is written over the first 3, "2" is written over the second 3 (6), "3" is written over the third 3 (9), "4" is written over the fourth 3 (12), and so on.

2. Can you use this table? It shows that one 3 is 3, two 3's are 6, three 3's are 9.

How much are four 3's? Five 3's are how much? Six 3's? Seven 3's? Eight 3's? Nine 3's?

3. Look at the colored 12 in the table. It shows that four 3's are 12, and that three 4's are 12.

What two multiplication facts does the 15 show?

4. What two multiplication facts does the 24 show?

5. What two facts does the 18 show? The 27? The 21?

6. Which colored number shows three 8's?

7. What colored number shows three 1's?

8. What number shows the product of:

3×5? 3×7? 3×9? 3×6?

Can You Multiply With 3's?

1. Look at the number table on page 182. Which colored number shows the product of 4×3?

2. What does the table show is the product of 6×3?

3. What is the product of 9×3?

The table shows multiplication facts that belong together. Tell the missing numbers.

4. $3 \times 7 = ?$ and $7 \times 3 = ?$

5. $3 \times 5 = ?$ and $5 \times 3 = ?$

6. $3 \times 8 = ?$ and $8 \times 3 = ?$

Copy these multiplication examples and write the products. Don't look at the table unless you have to.

	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*
7.	4 3	3 8	2 3	1 3	6 3	3 3	9 3	3 7
8.	3 2	5 3	3 9	7 3	3 5	8 3	3 6	3 4

9. Write a multiplication fact using the three numbers 3, 8, and 24.

10. Write a multiplication fact using 3, 7, and 21.

11. Write the multiplication fact that belongs with $3 \times 4 = 12$.

12. Write the fact that belongs with $3 \times 9 = 27$.

13. Write two multiplication facts using the numbers 6, 3, and 18.

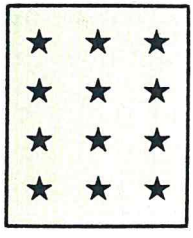
Can You Divide With 3's?

1. Don's father took Sue, Bob, and Don to the fair. He bought 9 merry-go-round tickets. If the tickets were divided equally, how many tickets did each child get?

There are three 3's in 9, so $9 \div 3 = 3$. The *quotient* of $3\overline{)9}$ is 3.

One of three equal parts of something is called **one third.** One third of 6 apples is 2 apples, because $6 \div 3 = 2$.

To find one third ($\frac{1}{3}$) of a number, divide by 3.



2. Jean has 12 gold stars to put on Christmas cards. If she puts 3 stars on each card, how many cards can she make? Look at the picture of the stars to find out. $12 \div 3 = 4$.

If Jean puts 4 stars on each card, how many cards can she make? $12 \div 4 = 3$.

What two division facts have you just found that belong together?

3. Jill has 18 flowers that she wants to sell in bunches. If she puts 3 flowers in each bunch, how many bunches will she have? $18 \div 3 = 6$.

If she puts 6 in a bunch, how many bunches will she have? $18 \div 6 = 3$.

What two division facts have you just found that belong together?

4. Allen has 15 pictures to put in his snapshot book. If he puts 3 pictures on a page, how many pages will the 15 pictures fill? $15 \div 3 = 5$.

If Allen can get 5 pictures on a page, how many pages will he use? $15 \div 5 = 3$.

What two division facts belong together?

5. Finish these division facts that belong together. Tell the missing numbers.

$24 = 8 \times 3$, so $24 \div 3 = ?$ and $24 \div 8 = ?$
$21 = 7 \times 3$, so $21 \div 3 = ?$ and $21 \div 7 = ?$
$27 = 9 \times 3$, so $27 \div 3 = ?$ and $27 \div 9 = ?$
$3 = 3 \times 1$, so $3 \div 3 = ?$ and $3 \div 1 = ?$

6. Copy this table of some division facts for 3 and finish it by writing the quotients.

$3\overline{)9}$	$3\overline{)12}$	$3\overline{)15}$	$3\overline{)18}$	$3\overline{)21}$	$3\overline{)24}$	$3\overline{)27}$
$3\overline{)9}$	$4\overline{)12}$	$5\overline{)15}$	$6\overline{)18}$	$7\overline{)21}$	$8\overline{)24}$	$9\overline{)27}$

Copy these division examples and write the quotients.

	a	b	c	d	e
7.	$3\overline{)18}$	$2\overline{)6}$	$3\overline{)6}$	$3\overline{)9}$	$6\overline{)18}$
8.	$3\overline{)15}$	$4\overline{)12}$	$3\overline{)24}$	$8\overline{)24}$	$5\overline{)15}$
9.	$3\overline{)12}$	$7\overline{)21}$	$3\overline{)3}$	$3\overline{)27}$	$3\overline{)21}$

Multiplying and Dividing With 3's

	1	2	3	4	5	6	7	8	9
3	3	6	9	12	15	18	21	24	27

You can use this table to find the multiplication and division facts for 3. Look at the 12. The 4 above it and the 3 at the end of the row show that:

$3 \times 4 = 12 \quad 4 \times 3 = 12 \quad 12 \div 4 = 3 \quad 12 \div 3 = 4$

1. In the table, find the product of 8 and 3. It is 24. Finish the facts the table shows about 24:

$3 \times 8 = ? \quad ? \times 3 = 24 \quad 24 \div 3 = ? \quad 24 \div 8 = ?$

2. Use the table to find how many 3's there are in 21. How many 7's are there in 21? What is the product of 3×7 and of 7×3?

Finish these multiplication and division facts that belong together. Tell the missing numbers.

3. $3 \times 6 = ? \quad 6 \times 3 = ? \quad 18 \div 3 = ? \quad 18 \div 6 = ?$

4. $3 \times 5 = ? \quad 5 \times 3 = ? \quad 15 \div 3 = ? \quad 15 \div 5 = ?$

5. $3 \times 9 = ? \quad 9 \times 3 = ? \quad 27 \div 9 = ? \quad 27 \div 3 = ?$

6. How many 3's are there in 12? In 27? In 3?

Write the answers to these examples on a paper.

	a	*b*	*c*	*d*
7.	$\frac{1}{3}$ of 24	3×6	$27 \div 3$	3×7
8.	4×3	$9 \div 3$	$\frac{1}{3}$ of 3	3×9
9.	$\frac{1}{3}$ of 18	3×3	$\frac{1}{3}$ of 15	$12 \div 4$
10.	3×1	8×3	$12 \div 3$	$21 \div 3$

Do You Multiply or Divide?

On your paper, write the numbers 1 through 10. After each number, write **M** if you multiply to work that problem or **D** if you divide. Then write the answer to the problem.

1. Sue has 12 peaches to give to her friends. If she gives 3 peaches to each one, how many friends can she give peaches to?

2. If Sue gives 4 peaches to each friend, how many friends will get peaches?

3. To how many friends can Sue give 2 peaches each?

4. Bill wants to buy 9 marbles costing 3¢ each. How much must he pay for the marbles?

5. At the fair, 8 children together buy 24 roller-coaster tickets. If each child gets the same number, how many rides does he get?

6. Sam fed 3 small carrots to each of 6 rabbits. How many carrots did he need?

7. If each rabbit got 2 large carrots, how many carrots would Sam need for his six rabbits?

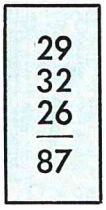
8. Bob knows that it takes 3 weeks for an egg to hatch. How many days are there in 3 weeks?

9. Jerry wants to buy some stamps that cost 3 cents each. He has 15 cents. How many stamps can he buy?

10. If apples cost 3¢ each, how much will 6 apples cost?

Pages 296 and 297 provide enrichment material which can be used after this page.

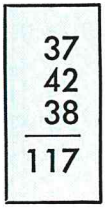
Adding Three Numbers



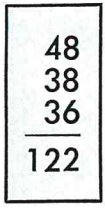
1. The children from three rooms are going to the playground. There are 29 children from the first room, 32 from the second room, and 26 from the third room. To find how many children are going to the playground, you add 29, 32, and 26.

Start at the right and add the ones column **down.** Think: (9 and 2) 11, (11 and 6) 17. You write the 7 and carry 1 ten to the tens column. How many children are going to the playground?

To check your work, add **up.** Think 8, 17. Finish by adding the tens up, also. Was your second sum the same as the first sum?



2. Jerry counted the stamps on three pages of his stamp book. There were 37 stamps on the first page, 42 on the second page, and 38 on the third page. To find how many stamps were on all 3 pages, you add the 3 numbers **down.** Check the work by adding **up.**



3. Three buses took children from Mary's school to sing with the children in another school. The buses held 48 children, 38 children, and 36 children.

The numbers are added in the box. When you add the ones, how many tens do you carry?

Check the work by adding **up.**

Copy these examples, add, and check.

	a	b	c	d	e	f
4.	27	45	56	64	37	29
	36	24	9	9	13	42
	13	26	18	27	48	10
5.	37	34	49	29	37	45
	44	86	26	26	37	27
	36	49	37	49	28	38
6.	60	36	68	19	76	38
	43	44	24	33	8	24
	7	23	43	28	26	36
7.	48	75	66	36	69	59
	37	24	49	46	28	47
	16	82	78	48	45	37
8.	72	70	58	87	69	79
	72	69	90	43	76	79
	72	28	78	80	97	79
9.	79	38	46	38	78	59
	48	38	75	67	60	54
	87	38	89	99	96	96
10.	89	74	64	69	79	65
	53	89	64	92	89	79
	97	96	64	59	97	98
11.	49	85	67	38	10	9
	55	85	98	80	58	66
	96	85	70	75	47	86
12.	47	78	36	93	29	89
	47	63	99	9	82	68
	47	50	47	88	8	65

Multiplying With Carrying

35¢	35¢
35¢	2
70¢	70¢

1. Ann's mother took Ann and Jean to the movies. The children's tickets cost 35¢ apiece. To find how much Ann's mother paid for them, you can add 35¢ and 35¢. Or you can multiply 35¢ by 2.

If you add 35¢ and 35¢, you see that 5 + 5 = 10. Write 0 in the ones place and carry 1 ten. 3 tens + 3 tens = 6 tens. 6 tens + 1 ten = 7 tens.

If you multiply 35¢ by 2, you see that 2 × 5 = 10 also. So you write 0 in the ones place and carry 1 ten to the tens.

You can see that you get the same answer by adding and by multiplying.

25	25
25	3
25	75
75	

2. Bob bought 3 boxes of baby chicks. There were 25 chicks in each box. You can find how many chicks Bob bought by adding or by multiplying. Which way is quicker? Is the product the same as the sum? Do you have to carry both times?

3. Dick had a long board. He measured it with a yardstick. The board was 3 yards long. Find how many inches long the board was by adding 36 and 36 and 36. Then multiply 36 by 3.

Was your answer the same both ways? Did you have to carry both times?

How many inches long was the board?

4. Find three 48's by adding, then by multiplying. What is the product? Is it the same as the sum?

Copy these examples and multiply.

	a	*b*	*c*	*d*	*e*	*f*
5.	15 × 2	29 × 2	24 × 3	27 × 3	46 × 2	38 × 2
6.	25 × 3	37 × 3	65 × 2	68 × 3	43 × 2	57 × 3
7.	34 × 2	56 × 3	48 × 2	39 × 3	18 × 2	49 × 3
8.	97 × 2	47 × 3	65 × 3	89 × 2	79 × 3	86 × 3
9.	76 × 3	48 × 3	49 × 2	99 × 3	37 × 2	78 × 3

Finding Parts of Numbers

Do you remember how to find parts of numbers?

Copy and finish these examples.

	a	*b*	*c*
1.	$\frac{1}{3}$ of 24 is ?	$\frac{1}{2}$ of 18 is ?	$\frac{1}{5}$ of 40 is ?
2.	$\frac{1}{2}$ of 14 is ?	$\frac{1}{5}$ of 25 is ?	$\frac{1}{3}$ of 27 is ?
3.	$\frac{1}{3}$ of 18 = ?	$\frac{1}{2}$ of 16 = ?	$\frac{1}{5}$ of 30 = ?
4.	$\frac{1}{2}$ of 10 = ?	$\frac{1}{3}$ of 21 = ?	$\frac{1}{5}$ of 45 = ?
5.	$\frac{1}{3}$ of 12 = ?	$\frac{1}{3}$ of 21 = ?	$\frac{1}{2}$ of 8 = ?
6.	$\frac{1}{5}$ of 10 = ?	$\frac{1}{5}$ of 20 = ?	$\frac{1}{2}$ of 12 = ?
7.	$\frac{1}{3}$ of 15 = ?	$\frac{1}{5}$ of 15 = ?	$\frac{1}{3}$ of 9 = ?

Dividing Larger Numbers by 2 and 3

tens ones	Check
42	42
3)126	3
	126

1. Don needed some stakes for his tomato plants. His father gave him a pole 126 inches long. Don cut it into 3 equal stakes for his plants. How many inches long was each of the three stakes?

You must divide 126 by 3. Start at the left. There are 12 tens. $12 \div 3 = 4$. Write 4 just above the 2, in the tens place. Then divide the 6 ones by 3. $6 \div 3 = 2$. Write the 2 in the ones place.

Do you remember how to check division? You multiply the quotient (42) by the divisor (3) to get the dividend. Is the answer right?

2. The third grade will give its puppet show 3 afternoons after school. We have made 150 tickets for people who want to see the show. If the same number come each time, how many people can come each afternoon we give our puppet show?

Copy these examples, divide, and check.

	a	b	c	d
3.	$2\overline{)128}$	$3\overline{)210}$	$2\overline{)142}$	$3\overline{)123}$
4.	$2\overline{)106}$	$3\overline{)276}$	$2\overline{)168}$	$3\overline{)189}$
5.	$2\overline{)186}$	$3\overline{)153}$	$2\overline{)188}$	$3\overline{)246}$
6.	$3\overline{)120}$	$3\overline{)216}$	$2\overline{)100}$	$3\overline{)183}$
7.	$3\overline{)279}$	$2\overline{)162}$	$3\overline{)240}$	$3\overline{)156}$
8.	$2\overline{)146}$	$3\overline{)273}$	$2\overline{)120}$	$3\overline{)219}$

Brushing Up Your Addition

These examples will help you remember what you have learned about addition.

Copy and add. Make sure every answer is right.

	a	b	c	d	e	f
1.	53 95 67	69 78 93	76 93 94	48 30 67	58 92 70	35 67 99
2.	49 68 73	68 87 79	63 79 39	58 69 93	70 28 64	39 54 80
3.	24 59 76	76 90 68	84 97 89	97 69 95	80 40 79	92 86 74
4.	59 43 95	27 8 38	56 56 56	9 49 87	98 75 20	77 69 55

Are Your Answers Sensible?

One good way to check your work in solving problems is to read each problem over again after you have worked it. Then look at your answer carefully. Does it make sense? If it looks too large or too small, you may have done something wrong. You may have used the wrong process.

After each of the problems on this page are three answers. One is correct. The other two do not make sense. Pick out the correct answer, and tell which process was used to get this answer.

1. Jean is handing out paper to 16 children. Each child is to get 2 sheets of paper. How many sheets will Jean need? (8 or 14 or 32)

2. Jim spent 27 cents for long rolls and 55 cents for hot dogs for a picnic. How much did he spend? (28¢ or 72¢ or 82¢)

3. Sally is making a bead necklace. She has 5 red beads and 15 white beads. How many more white beads than red beads does she have? (3 or 10 or 75)

4. Sally has 20 beads for her necklace. She thinks she will need 5 more beads. Then how many beads will she have in her necklace? (4 or 25 or 100)

5. Ellen bought 3 loaves of bread to make sandwiches for her party. Each loaf of bread cost 18 cents. How much did Ellen pay for the 3 loaves of bread? (15¢ or 21¢ or 54¢)

Picking the Correct Answer

Here are some more problems with three answers. Pick each correct answer and tell why you are sure it is the right one.

1. Tom worked 3 hours in the yard. His father paid him 60 cents for his work. How much an hour did he earn? (20¢ or 63¢ or 180¢)

2. Bob has an order for 24 eggs. He has only 18 eggs. How many more eggs does he need to fill the order? (6 or 32 or 42)

3. Dave bought a kite for 18 cents and some string for 9 cents. How much did he spend for both kite and string? (2¢ or 9¢ or 27¢)

4. We have 18 oranges. If we eat 6 a day, how many days will the 18 oranges last? (3 or 12 or 24)

5. Bill has 12 big marbles and 24 little marbles. How many marbles has he in all? (2 or 12 or 36)

6. Barbara had a ribbon 26 inches long. She gave half of it to Jean. How many inches of ribbon did Barbara have left? (13 or 24 or 52)

7. We took 27 apples to a picnic. Three of the apples were not eaten. How many apples did we eat at the picnic? (9 or 24 or 8)

8. Sue cut a pan of candy into 5 rows, with 8 pieces in each row. How many pieces of candy were there in the pan? (3 or 13 or 40)

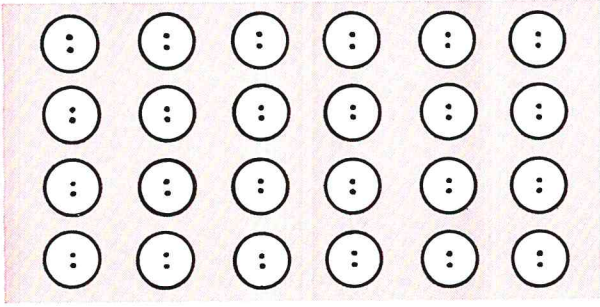
Pages 298 and 299 provide enrichment material which can be used after this page.

Multiplying With 4's

$$\begin{array}{r} 4 \\ 4 \\ \hline 16 \end{array}$$

1. Mother made a birthday cake for Ann's older brother, Hank. Ann put the candles on the cake. She made 4 rows with 4 candles in each row.

To find how many candles Ann needed, you can add $4 + 4 + 4 + 4$. Or you can multiply 4×4. How many candles did Ann put on the cake?



$$\begin{array}{r} 6 \\ 4 \\ \hline 24 \end{array} \qquad \begin{array}{r} 4 \\ 6 \\ \hline 24 \end{array}$$

2. Sally bought this card of buttons. There were 4 rows of buttons on the card with 6 buttons in each row. You can multiply by rows or by columns to find how many buttons are on the card.

These two multiplication facts belong together:

$4 \times 6 = 24 \qquad 6 \times 4 = 24$

3. You have already learned some of the 4's in the multiplication facts for 2, 3, and 5. Tell the products:

$2 \times 4 = ?$ $\quad 4 \times 2 = ?$ $\quad 3 \times 4 = ?$

$4 \times 3 = ?$ $\quad 5 \times 4 = ?$ $\quad 4 \times 5 = ?$

You know that multiplying any number by 1 does not change the number, so $4 \times 1 = 4$ and $1 \times 4 = 4$.

Here are all the multiplication facts for 4.

1×4	4×1	2×4	4×2	3×4	4×3	4×4	5×4	4×5	6×4	4×6	7×4	4×7	8×4	4×8	9×4	4×9
4		8		12		16	20		24		28		32		36	

Tell the missing numbers.

	a	b	c
4.	Four 6's = ?	Eight 4's = ?	Seven 4's = ?
5.	Four 9's = ?	Nine 4's = ?	Six 4's = ?
6.	Four 4's = ?	Four 7's = ?	Four 8's = ?

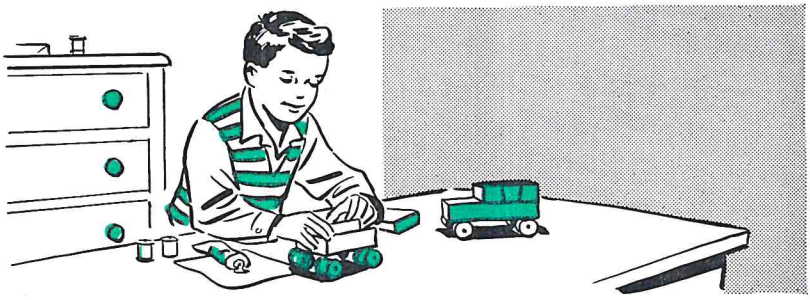
Copy and finish these multiplication facts.

	a	b	c	d	e	f	g	h
7.	5	3	4	4	4	4	4	1
	4	4	8	4	2	7	3	4
8.	8	4	9	7	4	6	4	4
	4	6	4	4	5	4	1	9

Copy and write the missing numbers.

	a	b	c	d
9.	$4 \times 7 = ?$	$4 \times 4 = ?$	$9 \times 4 = ?$	$6 \times 4 = ?$
10.	$4 \times 8 = ?$	$7 \times 4 = ?$	$4 \times 6 = ?$	$4 \times 9 = ?$

Dividing With 4's



1. Tom is making some wooden cars for his little brother Jimmy. Tom uses 4 spools for each car. He has 16 spools.

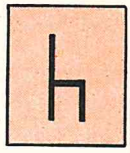
To find how many cars 16 spools will make, draw 16 spools in rows, with 4 spools in each row. $16 \div 4 = 4$.

2. Sue is making raisin faces on some cookies. Each face takes 4 raisins. Sue has 24 raisins. To find how many cookies she can put faces on, draw the cookies and put on the raisins. $24 \div 4 = 6$.

3. If Sue uses 6 raisins on each cookie, how many cookies can she put faces on? Draw the cookies to find out. These division facts belong together: $24 \div 4 = 6$. $24 \div 6 = 4$.

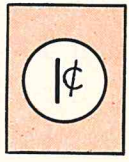
4. Jill has 32 pansies to plant in rows. If she puts 4 pansies in each row, how many rows will she have? $32 \div 4 = 8$. If she puts 8 pansies in each row, how many rows will she have? $32 \div 8 = 4$.

5. The boys have 36 chairs to put in rows. If they put them in 4 equal rows, how many chairs will be in each row? Draw the chairs to find out. $36 \div 4 = 9$.



If the boys put the chairs in 9 rows, how many chairs will there be in each row? $36 \div 9 = ?$

6. Dick has 28 cents. How many apples can he buy if he pays 4 cents for each apple? Draw 28 pennies to find out. $28 \div 4 = 7$.



If Dick pays 7 cents for each apple, how many apples can he buy? $28 \div 7 = ?$

7. Don has 4 apples. He wants to share them with Sam, Bob, and Dick. How many apples will each of the 4 boys get? $4 \div 4 = ?$

8. You have already learned some division facts about 4. Tell the quotients: $8 \div 2 = ?$ $8 \div 4 = ?$ $12 \div 3 = ?$ $12 \div 4 = ?$ $20 \div 5 = ?$ $20 \div 4 = ?$

9. You have learned, too, that dividing any number by 1 does not change the number. Then what is the quotient of $4 \div 1$?

10. A fourth of something is one of four equal parts of that thing.

To find one fourth ($\frac{1}{4}$) of a number, divide by 4.

Tell the missing numbers:

$\frac{1}{4}$ of 28 = ?	$\frac{1}{4}$ of 16 = ?	$\frac{1}{4}$ of 4 = ?
$\frac{1}{4}$ of 8 = ?	$\frac{1}{4}$ of 36 = ?	$\frac{1}{4}$ of 12 = ?
$\frac{1}{4}$ of 20 = ?	$\frac{1}{4}$ of 32 = ?	$\frac{1}{4}$ of 24 = ?

Multiplying and Dividing With 4's

	1	2	3	4	5	6	7	8	9
4	4	8	12	16	20	24	28	32	36

1. This number table shows all the multiplication and division facts for 4. Do you see how the 16 shows that $4 \times 4 = 16$?

Use the table to finish these facts that belong together. Tell the missing numbers.

2. $4 \times 7 = ?$ $7 \times 4 = ?$ $28 \div 4 = ?$ $28 \div 7 = ?$

3. $4 \times 9 = ?$ $9 \times 4 = ?$ $36 \div 4 = ?$ $36 \div ? = 4$

4. $4 \times 6 = ?$ $6 \times 4 = ?$ $? \div 4 = 6$ $24 \div ? = 4$

5. $4 \times 8 = ?$ $8 \times 4 = ?$ $? \div 4 = 8$ $32 \div ? = 4$

Copy and write the quotients.

	a	*b*	*c*	*d*	*e*
6.	$4\overline{)16}$	$8\overline{)32}$	$4\overline{)36}$	$7\overline{)28}$	$6\overline{)24}$
7.	$4\overline{)12}$	$9\overline{)36}$	$4\overline{)20}$	$2\overline{)8}$	$4\overline{)4}$
8.	$5\overline{)20}$	$4\overline{)32}$	$4\overline{)24}$	$3\overline{)12}$	$4\overline{)28}$

Copy and finish these facts.

	a	*b*	*c*	*d*
9.	$4 \times 7 = ?$	$4 \times 3 = ?$	$8 \times 4 = ?$	$6 \times 4 = ?$
10.	$4 \times 4 = ?$	$9 \times 4 = ?$	$4 \times 5 = ?$	$4 \times 8 = ?$
11.	$7 \times 4 = ?$	$4 \times 6 = ?$	$4 \times 9 = ?$	$4 \times 1 = ?$
12.	$16 \div 4 = ?$	$4 \div 1 = ?$	$36 \div 9 = ?$	$24 \div 4 = ?$
13.	$28 \div 4 = ?$	$12 \div 3 = ?$	$32 \div 4 = ?$	$20 \div 5 = ?$

How Well Do You Remember?

See how well you remember some of the multiplication and division facts you have had.

Copy and multiply.

	a	b	c	d	e	f
1.	$\begin{array}{r} 6 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times\ 8 \\ \hline \end{array}$
2.	$\begin{array}{r} 7 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 7 \\ \hline \end{array}$
3.	$\begin{array}{r} 3 \\ \times\ 8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times\ 6 \\ \hline \end{array}$
4.	$\begin{array}{r} 3 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 8 \\ \hline \end{array}$
5.	$\begin{array}{r} 9 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 8 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times\ 9 \\ \hline \end{array}$

Copy and divide.

	a	b	c	d
6.	$4\overline{)12}$	$2\overline{)18}$	$3\overline{)21}$	$5\overline{)40}$
7.	$3\overline{)15}$	$3\overline{)24}$	$5\overline{)35}$	$5\overline{)30}$
8.	$8\overline{)24}$	$5\overline{)45}$	$4\overline{)20}$	$7\overline{)21}$
9.	$6\overline{)30}$	$4\overline{)32}$	$9\overline{)36}$	$2\overline{)12}$
10.	$20 \div 5$	$16 \div 2$	$12 \div 4$	$27 \div 3$
11.	$28 \div 7$	$14 \div 7$	$25 \div 5$	$18 \div 3$
12.	$18 \div 6$	$16 \div 4$	$18 \div 9$	$24 \div 6$

Pages 300 and 301 provide enrichment material which can be used after this page.

Multiplication and Division Quickies

Number your paper 1 to 8. Write **M** or **D** after each number to show whether you multiply or divide. Then write the answer to the problem. Are your answers sensible?

1. Six girls are going to bring dolls to a toy show. If each girl brings 3 dolls, how many dolls will there be in all?

2. Bill shot 12 arrows at a target. Only half of them hit the target. How many arrows hit?

3. Ann wants to buy a doll that costs 35¢. She is saving 5¢ a week. How many weeks will it take her to save the money for her doll?

4. Jean has 4 boxes of colored pencils. There are 8 pencils in each box. How many colored pencils does Jean have?

5. It takes Joe 8 minutes to walk to school. Bill lives twice as far from school as Joe does. If Bill walks as fast as Joe, how many minutes should it take Bill to walk to school?

6. Tom is in school 5 hours a day. If he goes to school 5 days a week, how many hours a week does he spend in school?

7. If plums cost 3 cents each, how many plums can I get for 15 cents?

8. Jean's mother uses 3 quarts of milk a day. How many quarts of milk does she use each week?

More Quickies

Do these multiplication and division quickies just as you did those on page 202. See if you can find all the answers in your head without using your pencil.

1. How many cars will it take to carry 45 people to a picnic if each car holds 5 people?

2. In a game of ring toss, a ring that lands on the post counts 3 points. If Bill throws 6 rings like this, he will make how many points?

3. Dick and Tom want to make 8 little wagons for a toy circus. Each wagon will take 4 wheels. How many wheels will they need for the 8 wagons?

4. Bill's big brother is saving $3 a week to buy a table radio which costs $18. In how many weeks can he buy the radio?

5. Ellen bought 3 small bags of candy. There were 9 pieces in each bag. How many pieces of candy did Ellen buy?

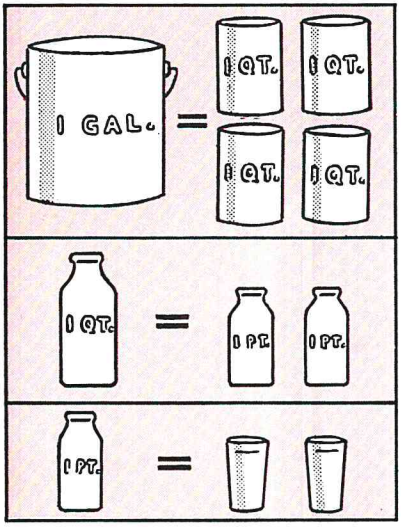
6. Sally paid 24¢ for 4 grapefruit. How much did each grapefruit cost?

7. Jean has 16 little hearts to use in making 4 valentines, all alike. How many hearts can she use on each valentine?

8. Bill and Tom are playing with 12 toy trucks. If they build garages that hold 3 trucks apiece, how many garages must they build?

How Much Is a Gallon?

2 pints = 1 quart. 4 quarts = 1 gallon.



The pictures at the left will help you answer the questions on this page.

Bob and Sue had a gallon of lemonade for their party. They wanted to know how many glasses of lemonade this would be.

Bob and Sue knew that their father bought oil for his car in **gallon** cans. They knew that a gallon is four quarts.

They knew that their father sold milk in quart bottles and pint bottles. How many pints in a quart?

They knew that in school the children bought milk in $\frac{1}{2}$-pint bottles. **One half pint** of milk made about one **glass** of milk. So how many glasses of milk = 1 pint of milk?

Bob and Sue used these facts to find their answer.

1 gallon = 4 quarts.

4 quarts = 4 × 2 pints, or 8 pints.

8 pints = 8 × 2 glasses.

How many glasses of lemonade will 1 gallon make?

Using Pints, Quarts, Gallons

Use what you learned on page 204 to solve these problems.

1. Bob bought a gallon of paint to paint his hen house. He had a quart of paint left. How many quarts did he use?

2. Bob's family has a thermos jug that holds just a gallon. How many quarts does it hold? How many pints? How many glasses?

3. Sue helped her mother can two gallons of tomato juice. How many quart jars did they need?

4. If ice cream costs 40 cents a pint, how much should a quart of ice cream cost?

5. Don uses a 12-quart pail to water his garden. How many gallons of water does the pail hold?

6. Don's father uses about a quart of oil a week in his truck. How many weeks will a gallon of oil last?

7. Don's family has a 6-quart ice cream freezer. How many pints will it hold?

8. If a pint of ice cream serves 3 people, how many pints are needed for 18 people? How many quarts is this?

9. Bill went to the store to buy 3 quarts of paint for his father. The storekeeper did not have any quart cans of paint. How many pint cans should Bill get?

Using a Table for Multiplication

	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45

You have had the multiplication and division facts about the 1's, 2's, 3's, 4's, and 5's. The table above shows all these facts.

Do you see how you use this table to find the multiplication facts? To get the product of 4 and 7, find 4 at the left and 7 at the top, and see where their row and column meet. $4 \times 7 = 28$ and $7 \times 4 = 28$.

Copy these multiplication examples and write the products. Use the table if you do not know a product.

	a	*b*	*c*	*d*	e	*f*
1.	2 3	9 2	4 6	5 3	3 8	4 3
2.	4 8	8 2	3 3	4 4	6 5	4 5
3.	2 5	6 4	7 2	8 3	9 4	7 5

Using a Table for Division

Look at the table on page 206. Find 28 in the table. Do you see how the table shows that $28 \div 4 = 7$ and $28 \div 7 = 4$?

Copy and write the quotients. Use the table only when you have to.

	a	*b*	*c*	*d*
1.	$3\overline{)18}$	$5\overline{)45}$	$5\overline{)20}$	$4\overline{)20}$
2.	$6\overline{)18}$	$4\overline{)16}$	$3\overline{)9}$	$7\overline{)21}$
3.	$5\overline{)40}$	$3\overline{)12}$	$6\overline{)30}$	$5\overline{)25}$
4.	$9\overline{)18}$	$4\overline{)24}$	$3\overline{)24}$	$8\overline{)40}$
5.	$4\overline{)28}$	$7\overline{)35}$	$4\overline{)36}$	$4\overline{)32}$
6.	$5\overline{)30}$	$3\overline{)24}$	$7\overline{)28}$	$8\overline{)24}$
7.	$4\overline{)4}$	$2\overline{)18}$	$3\overline{)27}$	$9\overline{)36}$

Brushing Up Your Subtraction

These examples will help you remember what you have learned about subtraction.

Copy, subtract, and check.

	a	*b*	*c*	*d*	e
1.	117 94	109 73	83 24	974 726	179 89
2.	809 503	506 267	90 24	607 297	500 238

Adding Longer Columns

26
19
23
18
86

1. Bob keeps a record of the eggs he gets from his hens. One week he got 26 eggs, the next week 19 eggs, the third week 23 eggs, and the fourth week 18 eggs.

To find how many eggs Bob got in the four weeks, add the four numbers. Start at the right and add **down.** Think: 15, 18, 26. 26 = 2 tens and 6 ones. Write 6 in the ones column under 8, and carry the 2 tens.

How many eggs did Bob get?

Check by adding **up.** Do you get the same sum?

$ .56
.75
.49
.08
$1.88

2. Sally went to the grocery store for her mother. The four things on her list cost 56¢, 75¢, 49¢, and 8¢. To find how much Sally spent, you add the four numbers. Tell how you add them down and where the point is placed in the sum. How much did Sally spend? Check the answer.

Copy these examples and add down. Check each example by adding up.

	a	b	c	d	e	f
3.	7 6 4 3	8 9 4 8	9 2 7 9	5 6 9 5	3 9 7 2	6 4 9 7
4.	4 5 6 5	6 6 9 5	6 5 7 5	4 6 3 7	6 3 5 9	8 6 3 8
5.	85 50 69 23	82 60 75 24	67 42 85 17	92 56 79 54	89 78 64 79	64 79 98 27
6.	18 26 7 14	23 10 75 84	65 33 47 19	64 30 68 56	35 73 97 49	68 87 39 67
7.	$ .37 .26 .09 .15	$ .98 .50 .63 .33	$ .84 .72 .16 .47	$ .40 .75 .89 .95	$ .68 .90 .47 .95	$ .89 .43 .70 .69
8.	$ .57 .58 .85 .92	$ .76 .50 .99 .07	$ .74 .96 .60 .75	$ .94 .68 .36 .84	$ .09 .47 .87 .74	$ .73 .89 .73 .59

Did you check each example?

Can You Carry in Multiplication?

\$ .29 .29 .29 .29 \$1.16	\$ .29 4 \$1.16

1. Sally bought 4 melons for her mother. The melons cost 29¢ apiece. To find how much Sally spent for the melons, you can add four 29's. Or you can multiply 29 by 4. When you add, you carry 3 dimes to the dimes column. When you multiply, you carry 3 tens in just the same way. Is the product the same as the sum? How much did Sally spend?

Copy these examples and find the products.

	a	*b*	*c*	*d*	*e*
2.	18 4	19 5	23 4	27 3	39 4
3.	98 4	13 4	73 5	17 2	28 5

Practice in Carrying

Copy and multiply.

	a	b	c	d	e
1.	25 × 2	59 × 4	32 × 5	84 × 5	73 × 5
2.	37 × 4	49 × 3	46 × 4	29 × 5	78 × 3
3.	65 × 3	38 × 5	37 × 3	67 × 5	96 × 4
4.	90 × 3	64 × 5	96 × 2	49 × 5	80 × 4

	a	b	c	d	e
5.	$ .58 × 3	$ .36 × 3	$ .24 × 4	$ .95 × 5	$ .79 × 4
6.	$ .38 × 3	$ .67 × 4	$ .29 × 2	$ .96 × 3	$ .68 × 5
7.	$ .15 × 4	$ .27 × 3	$ .16 × 5	$ .96 × 2	$ .19 × 4
8.	$ .52 × 5	$ .46 × 5	$ .47 × 2	$ .89 × 3	$ .76 × 5
9.	$ .88 × 2	$ .76 × 3	$ .86 × 4	$ .40 × 3	$ .99 × 5
10.	$ .94 × 3	$ .38 × 4	$ .35 × 2	$ .80 × 5	$ .75 × 4

Dividing by 2, 3, 4, and 5

$$\begin{array}{r} 40 \\ 4\overline{)160} \\ \end{array} \qquad \begin{array}{r} 40 \\ \times\ 4 \\ \hline 160 \end{array}$$

1. Ann and Jean are putting cookies in the boxes for the class picnic. They have 160 cookies, and are putting 4 cookies in each picnic box. In how many boxes can they put cookies?

To find out, divide 160 by 4, as shown. Tell how the work is checked.

Copy, divide, and check.

	a	*b*	*c*	*d*
2.	$4\overline{)244}$	$2\overline{)244}$	$2\overline{)168}$	$3\overline{)153}$
3.	$5\overline{)255}$	$3\overline{)186}$	$2\overline{)122}$	$4\overline{)204}$
4.	$3\overline{)219}$	$5\overline{)305}$	$4\overline{)288}$	$2\overline{)146}$
5.	$3\overline{)276}$	$4\overline{)408}$	$3\overline{)906}$	$3\overline{)390}$

Where Do You Start?

On your paper write in a column, "Add. Subtract. Multiply. Divide." After each word, write **R** or **L** to show whether you start at the right or the left when you do examples. Then copy and work each of these examples.

Add.

	a	b	c	d
1.	368 475	269 298	349 583	529 386

Subtract.

2.	939 462	953 264	807 478	700 259

Multiply.

3.	39 4	78 3	49 5	86 4

Divide.

4.	$3\overline{)129}$	$2\overline{)184}$	$5\overline{)455}$	$4\overline{)284}$

Finding $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$

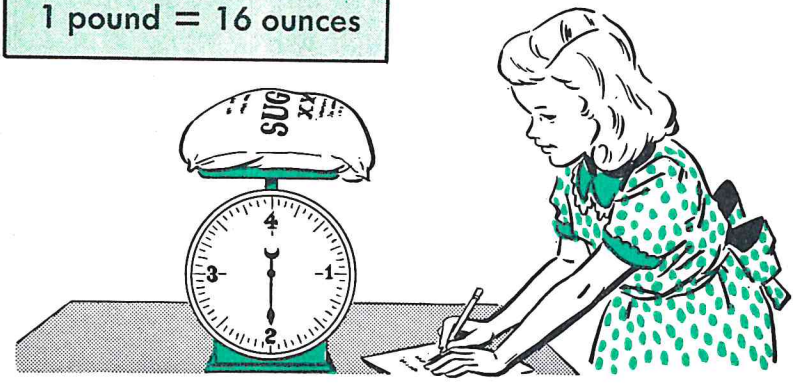
Copy and finish these examples.

	a	b	c
1.	$\frac{1}{3}$ of 18 = ?	$\frac{1}{5}$ of 35 = ?	$\frac{1}{4}$ of 20 = ?
2.	$\frac{1}{2}$ of 16 = ?	$\frac{1}{3}$ of 24 = ?	$\frac{1}{5}$ of 40 = ?
3.	$\frac{1}{5}$ of 45 = ?	$\frac{1}{2}$ of 18 = ?	$\frac{1}{4}$ of 36 = ?

Pages 302 and 303 provide enrichment material which can be used after this page.

Using Parts of Measures

1 pound = 16 ounces



1. Sue is weighing a bag of sugar on some scales. How many pounds does the bag of sugar weigh?

The little marks show how a pound is divided. Each mark shows 1 ounce. How many ounces are there in half a pound? In a pound?

2. Sally bought a quarter pound of tea. How many ounces make $\frac{1}{4}$ pound? $\frac{1}{4}$ of 16 ounces = ? ounces.

3. Ellen wants to buy a pound of peanuts in cans for her party. Each can holds 8 ounces of peanuts. How many cans must she buy? $16 \div 8 = ?$

4. Bob weighed some of his eggs. They weighed 2 ounces apiece. How many ounces did 4 eggs weigh? What part of a pound is this?

5. Bill bought a chocolate bar. The wrapper said the bar weighed 4 ounces. How many of these bars would make a pound? $16 \div 4 = ?$

6. How many eggs are $\frac{1}{2}$ dozen eggs? $\frac{1}{2}$ of 12 = ? How many eggs are $\frac{1}{3}$ dozen eggs?

7. Sally bought 4 eggs. What part of a dozen was this? If eggs were 69 cents a dozen, how much money did Sally have to pay?

8. When eggs were 60¢ a dozen, Sally bought 6 eggs. What part of a dozen did she buy? What did she pay for them?

9. Don is selling his early tomatoes for 20 cents a pound. If he sells half a pound, how much should he get for them?

10. Tom bought a dozen doughnuts and shared them equally with 3 other boys. Each boy got what part of a dozen?

11. Nancy says she will practice her piano for half an hour. How many minutes is this? $\frac{1}{2}$ of 60 = ?

12. Jean stayed a third of an hour after school yesterday to help Miss Blake. How many minutes after school did Jean stay? $\frac{1}{3}$ of 60 = ?

13. If a quart of ice cream will serve 6 children, how many children will a pint of ice cream serve?

14. Sue made a two-quart pitcher of lemonade. How many pints of lemonade was this? About how many glasses?

15. Ann bought a quarter of a yard of ribbon for a doll sash. How many inches of ribbon did she get?

16. Joe practiced on his trumpet for 18 minutes. How many minutes more than $\frac{1}{4}$ hour was this?

Finding Parts of Measures

Copy and write the missing numbers.

1. $\frac{1}{2}$ pound = ? ounces
2. $\frac{1}{4}$ hour = ? minutes
3. $\frac{1}{2}$ year = ? months
4. $\frac{1}{2}$ foot = ? inches
5. $\frac{1}{4}$ yard = ? inches
6. $\frac{1}{2}$ hour = ? minutes
7. $\frac{1}{4}$ pounds = ? ounces
8. $\frac{1}{3}$ hour = ? minutes
9. $\frac{1}{3}$ dozen oranges = ? oranges
10. $\frac{1}{4}$ dozen bananas = ? bananas

Which Is Smaller?

On your paper, write the measure that is smaller.

1. 1 yard or 30 inches
2. 1 foot or 11 inches
3. 1 pound or 20 ounces
4. 1 year or 9 months
5. 1 hour or 45 minutes
6. 1 dozen or 14 eggs
7. 1 yard or 2 feet
8. 1 week or 6 days
9. 1 gallon or 3 quarts
10. 1 quart or 3 pints
11. 1 quart or 1 glass
12. 1 dime or 11 cents
13. 3 nickels or 1 dime
14. $\frac{1}{2}$ foot or 8 inches
15. $\frac{1}{4}$ foot or 4 inches
16. $\frac{1}{3}$ foot or 3 inches.
17. $\frac{1}{2}$ pound or 6 ounces
18. $\frac{1}{4}$ pound or 10 ounces
19. $\frac{1}{2}$ year or 5 months
20. $\frac{1}{2}$ gallon or 1 quart
21. $\frac{1}{3}$ year or 3 months
22. $\frac{1}{4}$ yard or 10 inches
23. $\frac{1}{3}$ yard or 2 feet
24. $\frac{1}{2}$ hour or 25 minutes
25. $\frac{1}{4}$ hour or 10 minutes
26. $\frac{1}{4}$ hour or $\frac{1}{2}$ hour
27. $\frac{1}{2}$ dozen oranges or 5 oranges
28. $\frac{1}{4}$ dozen lemons or 2 lemons

Which Is More?

Tell which measure is larger.

1. 1 yard or 1 foot
2. 1 week or 10 days
3. 1 year or 10 months
4. 1 foot or 15 inches
5. 1 dime or 12 cents
6. 1 quart or 1 pint
7. 1 gallon or 3 quarts
8. 3 pints or 1 quart
9. 4 feet or 1 yard
10. 1 pound or 15 ounces
11. 9 oranges or 1 dozen oranges
12. $\frac{1}{4}$ of a dollar or $\frac{1}{2}$ of a dollar

How Do You Buy Things?

Here are some things people buy Do you know what measures they use when they buy these things?

bananas	cookies	milk
berries	eggs	oranges
buns	ice cream	ribbon
cloth	lemons	sugar
coffee	meat	tomatoes

On your paper, make four columns. Write these headings for your columns.

By dozen	By yard	By pound	By quart

Write in one of the columns each of the things above which people buy. If you buy bananas by the dozen, write *bananas* in the first column. If you buy them by the pound, write *bananas* in the third column.

You may want to list some other things people buy.

Keeping Height Records

Bob		Sue	
Age	Height	Age	Height
6	46 in.	6	44 in.
7	49 in.	7	46 in.
8	51 in.	8	50 in.
9	53 in.		

1. Whenever Bob and Sue have birthdays, their father measures them to see how tall they are. He keeps a record of their heights.

Look at Sue's height record above. On her 6th birthday, Sue was 44 inches tall. How tall was she on her 7th birthday? What was her height on her 8th birthday?

2. Look at Bob's record. How tall was Bob on his 6th birthday? On his 7th birthday? His 8th birthday? His 9th birthday?

3. How many inches did Sue grow between her 6th and 7th birthdays? Between her 7th and 8th?

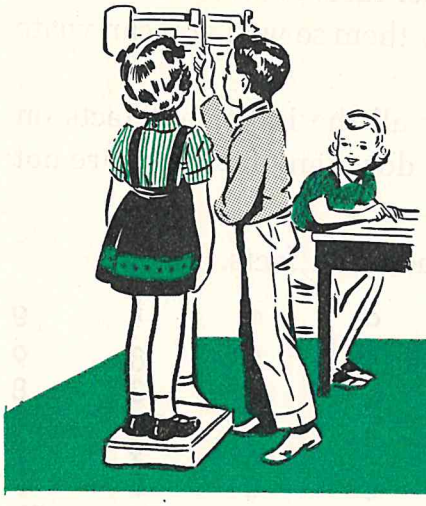
4. How many inches did Sue grow from the time she was 6 until the time she was 8?

5. How many inches did Bob grow between his 6th and 8th birthdays?

6. How many inches taller was Bob on his 9th birthday than on his 6th?

7. How much taller was Bob on his 7th birthday than Sue was on her 7th birthday?

Keeping Weight Records



Weight		
Name	Sept.	June
Ann	48	50
Bill	64	71
Jean	55	60
Ellen	58	63
Tom	60	65
Jerry	67	76

1. The teacher helped the children weigh themselves in September. They weighed themselves again in June.

Look at their record. How many pounds did Ann weigh in September? How much did she weigh in June? Then how many pounds has she gained?

2. How many pounds had Bill gained? $71 - 64 = ?$

3. How much had Jean gained in weight?

60 pounds − 55 pounds = ? pounds

4. Copy the names of the children. After each name, write the number of pounds the child gained. Which child had gained the least weight? Which child had gained the most weight?

Do You Know the Number Facts?

You will need the number facts in all the arithmetic you use. You should know them so well you can write them at once.

See whether you know all the important facts on the next two pages. Write down any facts you are not sure of and learn them.

Copy and finish these addition facts.

	a	b	c	d	e	f	g
1.	8 5	6 3	7 4	9 3	8 7	8 3	9 8
2.	7 5	6 4	9 4	4 8	8 8	9 9	3 7
3.	3 6	9 7	7 6	8 9	5 6	8 4	9 6

Copy and subtract.

4.	14 5	9 6	11 4	9 5	18 9	10 7	13 6
5.	11 5	15 6	10 5	12 5	17 9	13 5	11 8
6.	9 3	13 7	12 9	14 8	15 7	12 4	14 7
7.	10 3	12 7	17 8	12 8	15 9	11 6	13 9
8.	11 2	14 6	13 4	11 9	16 8	10 2	16 9

Copy and finish these multiplication facts.

	a	b	c	d	e	f	g
9.	$\begin{array}{r} 4 \\ \times\ 9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times\ 8 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times\ 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times\ 7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 8 \\ \hline \end{array}$
10.	$\begin{array}{r} 9 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times\ 8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 6 \\ \hline \end{array}$
11.	$\begin{array}{r} 5 \\ \times\ 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times\ 5 \\ \hline \end{array}$
12.	$\begin{array}{r} 2 \\ \times\ 6 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times\ 9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times\ 4 \\ \hline \end{array}$
13.	$\begin{array}{r} 7 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times\ 7 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times\ 4 \\ \hline \end{array}$

Copy and divide.

	a	b	c	d	e
14.	$5\overline{)20}$	$3\overline{)21}$	$4\overline{)16}$	$3\overline{)24}$	$5\overline{)35}$
15.	$3\overline{)12}$	$4\overline{)12}$	$5\overline{)25}$	$5\overline{)45}$	$4\overline{)32}$
16.	$5\overline{)10}$	$3\overline{)18}$	$4\overline{)24}$	$3\overline{)27}$	$2\overline{)16}$
17.	$5\overline{)30}$	$5\overline{)40}$	$4\overline{)36}$	$2\overline{)18}$	$4\overline{)28}$
18.	$3\overline{)15}$	$4\overline{)20}$	$7\overline{)7}$	$2\overline{)14}$	$5\overline{)15}$
19.	$2\overline{)12}$	$3\overline{)9}$	$4\overline{)8}$	$5\overline{)5}$	$8\overline{)32}$
20.	$6\overline{)18}$	$6\overline{)30}$	$8\overline{)16}$	$2\overline{)10}$	$8\overline{)40}$
21.	$7\overline{)21}$	$6\overline{)24}$	$9\overline{)45}$	$9\overline{)27}$	$9\overline{)36}$
22.	$7\overline{)35}$	$7\overline{)28}$	$7\overline{)14}$	$9\overline{)18}$	$8\overline{)24}$

Can You Use Number Facts?

Here are some more quickies. Solve the problems in your head and give the answers.

1. Sally wants to cut a ribbon 40 inches long into 8-inch pieces. How many pieces will there be?

2. Sam had 15 rabbits and sold 7 of them. How many rabbits did he have left?

3. Ellen is 9 years old. Her big brother Nick is 16 years old. How many years older than Ellen is her brother Nick?

4. Ann spends 6 cents for milk each school day. How much does she spend for milk in 5 days?

5. Bill bought a bag of marbles for 7¢ and a whistle for 8¢. How much did he spend in all?

6. Our family eats 5 oranges every day. How many days will 15 oranges last us?

7. Peggy spent 9¢ for some jacks and had 7¢ left. How much did she have before buying the jacks?

8. Don picked 5 ripe tomatoes on Wednesday and 6 on Thursday. How many tomatoes did he pick on those two days?

9. Father had 27 pennies. He divided them equally among Tom, Bill, and Ann. How many pennies did each child get?

10. For their play, Ann's class put 36 chairs in 4 equal rows. How many chairs did they put in each row?

Some Quickies With Measures

Don't use your pencil. Just give the answers.

1. One of Ann's dolls is only half a foot tall. How many inches is this?

2. Don is putting a dozen peaches in a basket. He has put in 9 of the peaches. How many more does he need?

3. Jill earns 5 cents a day. How many days will it take her to earn a quarter?

4. Don planted his pepper plants a foot and a half apart. How many inches was this?

5. Bob heard that it takes 4 weeks for duck eggs to hatch. In how many days do they hatch?

6. It is 14 days until Dave's birthday. How many weeks is this?

7. This morning Dave counted 18 rubbers in the cloakroom. How many children in his class wore rubbers to school today?

8. Mary went out to play for a quarter of an hour. She has been out for 9 minutes. How many minutes more may she play?

9. Mother bought a half-gallon package of ice cream. How many quarts of ice cream did she get?

10. One of Don's tomatoes weighed 4 ounces. How many tomatoes of this size would it take to make a pound?

Pages 304 and 305 provide enrichment material which can be used after this page.

Practice With Money Numbers

You have learned to add, subtract, and multiply dollars and cents. The examples on these two pages will show you if you remember how to do this.

Remember the point and dollar sign in each answer.

Copy and add.

	a	*b*	*c*	*d*
1.	\$3.06 1.23	\$ .64 .73	\$ .38 .98	\$3.37 1.43
2.	\$4.05 2.08	\$6.17 2.85	\$5.29 1.71	\$4.39 4.96
3.	\$6.59 2.53	\$5.08 3.07	\$4.09 3.78	\$3.89 5.62
4.	\$4.46 2.07	\$2.68 4.32	\$ .78 .92	\$1.56 6.49

Copy, subtract, and check.

5.	\$5.75 2.50	\$1.46 .84	\$1.32 .77	\$9.60 2.14
6.	\$2.82 .73	\$7.31 3.64	\$3.03 2.06	\$1.59 .82
7.	\$1.41 .46	\$8.25 4.67	\$6.27 3.18	\$1.29 .89
8.	\$8.92 2.70	\$9.61 5.36	\$5.00 2.98	\$10.00 4.73
9.	\$10.82 4.76	\$8.25 5.38	\$9.01 5.87	\$10.94 8.09

Copy and multiply.

	a	b	c	d
10.	\$ .62 × 4	\$ .73 × 3	\$ .68 × 5	\$ .19 × 4
11.	\$ .29 × 3	\$ .13 × 5	\$4.05 × 2	\$1.75 × 4
12.	\$ .86 × 4	\$ .47 × 5	\$3.15 × 3	\$1.46 × 5
13.	\$2.34 × 2	\$1.20 × 4	\$2.03 × 3	\$ .37 × 5

14. Find the product of $4 \times 85¢$.
15. Find the sum of \$1.79 and $98¢$.
16. Find the remainder of $\$2.00 - 95¢$.
17. Find the difference between \$1.50 and $81¢$.

Copy and do what the sign tells you to do.

	a	b
18.	\$2.54 + \$2.00	\$4.79 + $50¢$
19.	\$2.46 − \$ .78	\$5.00 − \$2.12
20.	\$1.31 − $68¢$	\$9.50 − \$8.07
21.	2 × \$2.13	5 × $46¢$
22.	4 × $95¢$	3 × \$1.80
23.	\$10.00 − \$7.89	5 × \$ .89
24.	\$1.68 ÷ 4	\$2.89 + \$5.48
25.	\$3.17 + \$ .75	\$ .86 + \$1.28

Have you made sure all your answers are correct?

Pages 306 and 307 provide enrichment material which can be used after this page.

Using Money Numbers

On your paper, write the numbers 1 to 8. Show how you will work each problem by writing a letter after each number. Write **A** if you add, **S** if you subtract, or **M** if you multiply. Then write the answer.

1. Bob and Sue are saving for a camera. Bob has saved $1.89. Sue has saved 82¢. How much have they saved together?

2. Nancy wants to buy a doll house for $8.25. She has saved $5.75. How much money does she still need?

3. Sally went to the store for her mother. She had $4.00 when she went into the store. She had $1.64 left when she went out. How much did Sally spend in the store?

4. When eggs were 56¢ a dozen, Bob sold 3 dozen eggs. How much did he get for them?

5. Don earned $5.37 from his garden. Then he got 75¢ for a basket of tomatoes. How much money did he have then?

6. In three weeks, Sam earned $1.09, 75¢, and 90¢. How much did he earn in all?

7. Don sold 3 baskets of peaches at the road stand. Peaches were $1.20 a basket. How much money did Don get for 3 baskets?

8. How much will four movie tickets cost at 35¢ a ticket?

Do You Remember Measure Facts?

You have used several facts about measures. See how many you know.

1. How many months are there in a year?
2. How many inches are there in a foot?
3. How many things are a dozen things?
4. How many days has a week?
5. A pound has how many ounces?
6. How many quarts does it take to make a gallon?
7. A quart is how many pints?
8. How many feet are there in a yard?
9. A yard is how many inches long?

Brushing Up on Division

These examples will help you remember what you have learned about division.

Copy, divide, and check.

	a	*b*	*c*	*d*
1.	$3\overline{)24}$	$4\overline{)36}$	$2\overline{)12}$	$5\overline{)35}$
2.	$4\overline{)28}$	$3\overline{)27}$	$5\overline{)45}$	$2\overline{)18}$
3.	$4\overline{)168}$	$3\overline{)216}$	$2\overline{)126}$	$5\overline{)405}$
4.	$2\overline{)408}$	$3\overline{)960}$	$4\overline{)324}$	$3\overline{)249}$
5.	$5\overline{)300}$	$4\overline{)240}$	$2\overline{)168}$	$5\overline{)205}$
6.	$3\overline{)183}$	$5\overline{)250}$	$4\overline{)200}$	$2\overline{)102}$

Do You Know Arithmetic Words?

See how many arithmetic words you know. Don't use your pencil. Just give the answers.

1. What is the sum of 20 and 5?
2. What is the product of 9 and 5?
3. What is the difference between 25¢ and 10¢?
4. Twice 10 cents is how many cents?
5. Half of 10 cents is how many cents?
6. How many 4's are there in 24?
7. What number is 5 less than 15?
8. Eleven is 3 more than what number?
9. What is the quotient of 36 divided by 4?
10. Six multiplied by 5 is what number?
11. What is a fifth of 45?
12. Three times 6 equals what number?
13. Twelve plus 4 equals what number?
14. Eight added to 7 makes what number?
15. Sixteen minus 9 equals what number?
16. Nine is 6 less than what number?
17. One third of 15 is what number?
18. What number is one fourth of 32?
19. What number is 8 more than 9?
20. Twenty-eight divided by 7 equals what number?
21. How much are four 7's?
22. What number divided by 3 equals 4?
23. What number multiplied by 2 equals 8?

Can You Use Zeros and Ones?

Do you remember how to add, subtract, multiply, and divide with zeros?

Copy and fill the blanks.

	a	*b*	*c*
1.	$0 + 7 = ?$	$9 + 0 = ?$	$0 + 0 = ?$
2.	$5 - 0 = ?$	$0 - 0 = ?$	$8 - 8 = ?$
3.	$4 \times 0 = ?$	$0 \times 0 = ?$	$0 \div 3 = ?$

Can you use 1's? Copy and finish these examples.

4.	$6 + 1 = ?$	$1 + 9 = ?$	$10 - 1 = ?$
5.	$5 \times 1 = ?$	$1 \times 4 = ?$	$1 \times 1 = ?$
6.	$5 \div 1 = ?$	$1 \div 1 = ?$	$8 \div 8 = ?$

Copy and fill in the missing numbers.

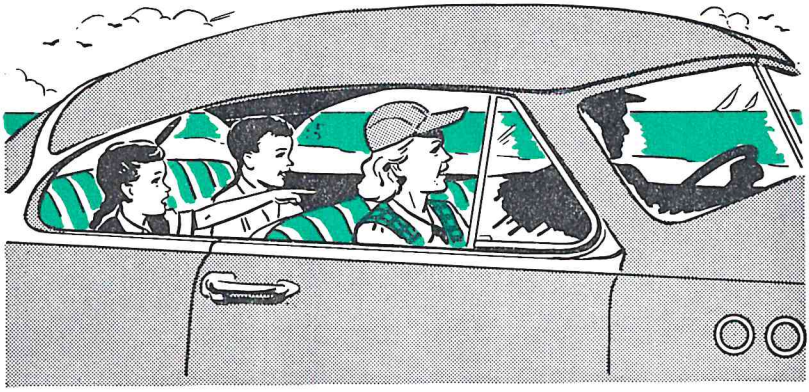
7.	$4 + 0 = ?$	$4 + 1 = ?$	$0 + 1 = ?$
8.	$3 - 1 = ?$	$3 - 0 = ?$	$1 - 0 = ?$
9.	$6 \times 1 = ?$	$6 \times 0 = ?$	$1 \times 0 = ?$
10.	$6 \div 1 = ?$	$0 \div 6 = ?$	$0 \div 1 = ?$

Brushing Up on Division

Copy, divide, and check.

	a	*b*	*c*	*d*
1.	$2\overline{)40}$	$1\overline{)6}$	$3\overline{)90}$	$4\overline{)4}$
2.	$2\overline{)406}$	$3\overline{)960}$	$4\overline{)408}$	$5\overline{)405}$
3.	$3\overline{)0}$	$3\overline{)270}$	$2\overline{)186}$	$5\overline{)350}$
4.	$4\overline{)208}$	$2\overline{)120}$	$5\overline{)0}$	$3\overline{)243}$

Taking Trips



Jean Lane and her brother Tony live in the city. Every summer, they go on trips with their parents. Here is some arithmetic they used on two of their trips. Did they add, subtract, multiply, or divide? On your paper, write **A**, **S**, **M**, or **D** after the number of each problem. Then work the problems and write the answers.

1. On one summer trip, they drove to the seashore, 240 miles away. By noon they had gone 145 miles. How many miles did they still have to go?

2. Jean counted 108 animals on her side of the road. Tony counted 97 animals on his side. How many animals did they count together?

3. Then they counted gasoline pumps. Jean counted 91 and Tony counted 100. How many more pumps did Tony count than Jean?

4. At the shore, their mother bought Jean and Tony sun hats for 55 cents each. How much did Mrs. Lane spend for the two hats?

5. Mrs. Lane bought the children 8 pairs of socks for 30¢ a pair. How much did the socks cost altogether?

6. Tony taught Jean to float. He paid her 3 shells every time she tried. Jean got 15 shells. How many times did she try to float?

7. On another trip, Jean and Tony went to their uncle's home, 140 miles away. The trip both ways was how many miles?

8. On the trip to their uncle's, it took 5 gallons of gasoline to go 105 miles. How many miles did one gallon take them?

9. While they were there, the circus came. Jean took 3 elephant rides at 10¢ a ride. How much did she spend?

10. If four children could ride on the elephant at one time, how many children could the elephant carry in 9 rides?

11. Jean had a quarter to spend for popcorn and peanuts. She spent 10¢ for popcorn. How much did she have for peanuts?

12. There were 27 small monkeys and 9 big monkeys in the parade. How many monkeys were there in all?

13. Coming home, they drove 120 miles in 4 hours. How many miles an hour did they go?

When Do You Add or Subtract?

These problems without numbers will help you find out if you know when to add and when to subtract.

You don't have to work any problems. Just write the number of each problem on your paper. Think "Should I add or should I subtract?" Then write **add** after the number if you should add, or **subtract** if you think you should subtract.

1. You know how many children were in a school bus. You know how many got out. Do you add or subtract to find how many were left in the bus?

2. You know how much money you had in your bank. You know how much you have just put into the bank. Do you add or subtract to find how much money is in your bank now?

3. You know the price of a baseball and the price of a bat. Do you add or subtract to find the price of both things together?

4. You know how many apples Don had and how many he gave away. How do you find how many he had left?

5. You know how much Ann has saved toward a doll. You know how much the doll costs. How do you find out how much more Ann needs to save?

6. You know how many pupils there are in your class. You know how many of them are boys. How do you find how many girls are in the class?

7. You know how many boys are at a party. You know how many girls are at the party. How do you find how many children are at the party?

8. You know how much money you spent. You know how much money you gave the clerk. Do you add or subtract to find how much change you should get?

9. You know how many marbles Bill has and how many marbles Joe has. How do you find how many marbles the two boys have together?

10. You know how tall Bob is and how tall Sue is. How do you find how much taller Bob is than Sue?

11. You know the ages of two children. How do you find how much younger one child is than the other?

12. You know how many red and how many white roses Jill picked. How do you find how many roses she picked in all?

13. You know how many pounds you weigh and how many pounds your father weighs. How do you find how much heavier your father is than you are?

14. You know how many apples Bob has left and how many apples he gave away. How do you find how many apples he had at first?

15. You know how many big marbles you have and how many little marbles. How do you find how many marbles you have in all?

16. You know the weights of two children. How do you find how much heavier one child is?

Page 308 provides enrichment material which can be used after this page.

When Do You Multiply or Divide?

These problems will help you find out whether you know when to multiply and when to divide.

On your paper, write **multiply** after the number of each problem if you think you should multiply. Write **divide** if you think you should divide. There are no other answers to find.

1. You know how many rows of cookies there are in a pan, and how many cookies in each row. Do you multiply or divide to find how many cookies there are in the pan?

2. You know how much one apple costs. Should you multiply or divide to find out how much four apples cost?

3. You know how many socks there are in the wash. To find how many pairs of socks this is, do you multiply or divide the number of socks by 2?

4. You know how much you paid for 3 bus tickets. To find how much each ticket cost, do you multiply or divide by 3?

5. You know how much 1 candy bar costs. You want to know how many candy bars you can buy for 25¢. To find out, do you multiply or divide 25¢ by the cost of one candy bar?

6. If you know how much a pound of butter costs, do you multiply or divide by 2 to find the cost of half a pound?

7. To find how many chairs there are in three rows with six chairs in each row, do you multiply or divide?

8. You know how many glasses one quart of lemonade will fill. You have two quarts of lemonade. To find the number of glasses in two quarts, do you multiply or divide by 2?

9. You know how many pieces of candy are to be shared by 3 children. To find how many pieces each child gets, do you multiply or divide by 3?

10. You know how many jelly beans you can get for 1¢. To find how many you can get for 5¢, do you multiply or divide by 5?

11. You know how many badges you want to get from a piece of ribbon 18 in. long. Do you multiply or divide to find how long each badge will be?

12. You know how many miles you can ride your bicycle in 1 hour. To find how many miles you can go in 3 hours, do you multiply or divide by 3?

13. You know how many feet high a tree is. Do you multiply or divide by 2 to find the height of a tree twice as high?

14. You know the length of a board. Do you multiply or divide by 2 to find how many pieces, each 2 feet long, you can cut from the board?

15. Do you multiply or divide by 2 to find half of the number of cookies your mother made?

Page 309 provides enrichment material which can be used after this page.

Problems About Hobbies

For these two pages, write the numbers 1 through 14 on your paper. After each number, write **A** if you add, **S** if you subtract, **M** if you multiply, or **D** if you divide. Work the problems and write each answer after the **A**, **S**, **M**, or **D**.

1. Sam keeps rabbits. He bought one rabbit for $1.25 and another one for 75 cents. How much did he pay for both rabbits?

2. Sam has 15 rabbits. If each rabbit gets 3 little carrots to eat, how many carrots will Sam need to feed all the rabbits?

3. Sam sold 4 little rabbits for 55 cents each. How much money did he get for all four rabbits?

4. Jerry collects stamps. He wants to buy a stamp album costing $3.98 and some stamps costing $1.39. How much money does he need in all?

5. Jerry got a package of 80 new stamps. He wants to trade 36 of them. How many does he want to keep?

6. Bill likes automobile toys. He wants a service station for $4.39. He has $3.75. How much more money does he need?

7. Tom has collected 210 stones and 96 shells. How many more stones than shells has he?

8. Last year Tom had 18 kinds of shells. He has 33 kinds now. How many new kinds has he collected since last year?

9. Nora likes to read. Her new book has 120 pages. Nora plans to read it in 3 days. How many pages a day should she read?

10. Allen takes pictures with his camera. He has 3 new films. He can take 12 pictures with each film. How many pictures can he take with 3 films?

11. Sally is sewing her button collection on cards. If each card holds 24 buttons, how many buttons will 4 cards hold?

12. Nancy practiced the piano 35 minutes yesterday and 25 minutes today. How many minutes did she practice in both days?

13. Jean bought some colored pencils for $1.19 and a paint brush for 98¢. How much did she spend?

14. Sue's class needs 128 cookies for a picnic. She said she would make $\frac{1}{4}$ of them. How many cookies did Sue promise to make?

Thinking About Numbers

1. Sixty-seven means how many tens? How many ones?

2. In the number 528, what figure tells the number of tens? Of hundreds? Of ones?

3. What number means 4 hundreds, one ten, and 4 ones?

4. What number is just after 100? Just after 79?

5. What number is 1 more than 989?

6. What number is 100 more than 500?

Can You Read Dates?

100	200	300	400	500	600	700	800	900	1000
1100	1200	1300	1400	1500	1600	1700	1800	1900	2000

1. See if you can read the numbers in the table above. You are counting by 100's. 1000 means 10 hundred. How many hundreds is 1100? 1900?

1900	1910	1920	1930	1940	1950	1960	1970	1980	1990

2. Can you read the numbers in this table? Here you count by 10's. What number is 10 more than 1940?

1950	1951	1952	1953	1954	1955	1956	1957	1958	1959

3. Read the numbers in the line above. You are counting by 1's. What number is 1 more than 1952?

4. The year 1953 is read **nineteen hundred fifty-three.** Usually, when we read dates, we skip the hundred and say just **nineteen fifty-three.** How would you read the date, April 20, 1957?

Read these dates.

	a	*b*
5.	January 1, 1950	August 16, 1939
6.	December 25, 1907	February 12, 1941

On your paper, write the following dates in figures.

7.	Nineteen fifty-six	Nineteen sixty
8.	Nineteen sixty-one	Nineteen hundred

How Much Is a Thousand?

10 hundred = 1 thousand

1. Ten hundred (1000) is also called one thousand. This number may be written 1,000. The comma shows the number of thousands.

1100 (eleven hundred) is often written 1,100. Eleven hundred is the same as 1 thousand 1 hundred.

Twelve hundred means one thousand and how many hundreds? Write this number, using a comma.

Eighteen hundred means one thousand and how many hundreds? Write this number with a comma.

2. The number 1,685 may be read 1 thousand 6 hundred 85. It means 1 thousand, 6 hundreds, 8 tens, 5 ones. How would you read 1,469? What does each figure in this number mean?

3. Read these numbers. Tell what each figure means.

1,328 1,675 1,946 1,732 1,489

4. The zero in 1,072 means that there are no hundreds in this number. What does each of the other figures mean?

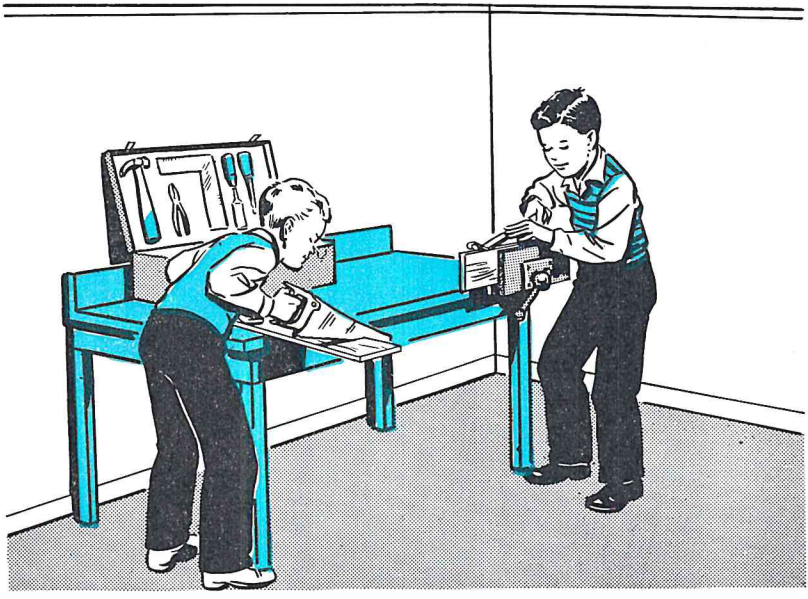
5. What does the zero in 1,340 mean?

6. When you write "one thousand eight hundred six" in figures, which place has a zero?

7. Write one thousand sixty-two in figures. What does each figure mean?

Pages 310 and 311 provide enrichment material which can be used after this page.

Adding Columns



$	6.95
	2.69
	.98
	$10.62

1. Dick's third grade class bought a tool box for $6.95, a saw for $2.69, and a chisel for 98¢. To find the total cost, you add the three numbers. Start at the **right** and add **down.** You must carry twice. See how the dollar sign and the point are written in the sum. Cover your answer and check by adding **up.**

Copy these examples, add down, and check by adding up.

	a	*b*	*c*	*d*	*e*
2.	136	399	265	549	56
	47	872	466	445	307
	309	46	707	675	259

Copy, add, and check.

	a	b	c	d	e
3.	270 356 163	525 829 384	635 226 175	375 186 54	258 606 745
4.	578 354 787	249 318 957	267 545 850	382 879 56	557 446 68
5.	89 327 640	609 32 156	368 72 355	22 967 401	437 68 359
6.	149 870 265	351 495 324	369 148 474	578 186 139	547 179 785
7.	$1.68 .90 2.25	$4.50 1.75 2.30	$ .79 3.16 6.18	$2.78 8.00 3.50	$5.87 3.33 8.75

Copy in columns, add, and check.

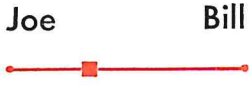
	a	b
8.	474 + 75 + 112	12 + 461 + 87
9.	$6.42 + $3.47 + $5.36	$5.02 + $.97 + $1.49
10.	98¢ + 75¢ + $1	$.65 + $2.98 + $.79
11.	759 + 96 + 427	678 + 906 + 69
12.	409 + 82 + 665	978 + 672 + 37
13.	368 + 458 + 666	587 + 44 + 439
14.	$5.09 + $5.64 + 98¢	$8 + $3.93 + $5.19
15.	$3.77 + 79¢ + $4.80	88¢ + $7.73 + $2.29

Using Pictures To Solve Problems

Sometimes pictures or drawings will help you understand what you do to solve problems. See if drawings will show you whether you add, subtract, multiply, or divide to do these quickies.

1. Don has 12 apples. To how many children can he give 3 apples apiece? Draw the 12 apples. Draw a line around each 3 apples. How many groups of apples are there?

2. Jane is 49 inches tall. Her mother is 65 inches tall. On your paper, draw two lines like those at the left. Mark the longer line 65 and the shorter line 49. How do you find how much taller Jane's mother is?



3. Joe lives 4 blocks from school on one side of the schoolhouse. Bill lives 8 blocks from school on the other side. Draw a line like the one shown. What do you write on it? How do you find how many blocks it is from Bill's house to Joe's house?

4. Jerry had 15 stamps on one page of his trading book. He traded 9 of the stamps. Draw 15 stamps. Cross out 9 of them. How do you find how many stamps were left on the page?

5. Nine boys and 8 girls went to Ellen's party. Draw 9 boys (🧍) and 8 girls (🧍). How many children went to the party?

Scouts Use Arithmetic

Decide which process to use, then find the answers.

1. Bill belongs to a pack of Cub Scouts. He pays dues of 10¢ a week. How much will he pay in 5 weeks?

2. The pack had $19.25 and spent $12.75 for a basketball. How much did they have left?

3. One night several dens of Cubs had a picnic at a farm 18 miles away. How many miles was it to the farm and back?

4. Twenty-five boys were going to the picnic. If 5 boys could go in one car, how many cars were needed to take all the boys?

5. The car Tom was riding in got there in half an hour. It took Bill 45 minutes to get there. Tom got there how many minutes sooner than Bill?

6. If each of the 25 boys had 4 hot dogs for supper, how many hot dogs were needed?

7. There were 60 marshmallows. If each boy had 3, how many boys could have marshmallows?

8. Four of the mothers each made 30 cookies for the picnic. How many cookies did the boys take along with them?

9. They took 80 sandwiches to the picnic. After the picnic was over there were only 4 sandwiches left. How many had they eaten?

Page 312 provides enrichment material which can be used after this page.

Remembering Addition

See how well you can add. Copy and find the sums.

	a	b	c	d	e	f
1.	27 6	19 5	38 6	5 15	23 14	46 20
2.	60 95	73 36	52 83	82 47	\$ .58 .68	\$ .13 .89
3.	666 218	829 109	407 465	149 837	\$4.08 3.12	\$3.46 2.47
4.	559 370	163 553	496 211	180 440	\$2.90 1.83	\$3.77 5.40
5.	173 137	69 84	387 149	\$1.38 2.65	\$3.87 4.87	\$6.49 1.62
6.	129 86	81 257	306 37	\$ .76 1.04	\$4.14 .93	\$2.73 .27
7.	7 3 5 8 4	9 7 3 6 5	58 48 56 20	37 65 8 48	\$ .25 .64 .04 .18	\$ .04 .60 .89 .75
8.	378 236 185	647 96 179	59 155 721	\$3.42 .99 3.80	\$2.87 5.88 1.72	\$ .98 7.64 8.79

	a	b
9.	649 + 576 + 78	504 + 897 + 379
10.	77 + 49 + 594	\$2.87 + 78¢ + 59¢
11.	\$4.38 + \$7.09 + 66¢	\$6.80 + \$3.75 + \$4.25

Remembering Subtraction

Copy, subtract, and check.

	a	b	c	d	e	f
1.	19 4	27 3	32 5	23 9	79 46	58 18
2.	127 36	143 90	168 81	137 77	$1.26 .60	$1.50 .80
3.	487 260	296 221	548 234	$9.07 7.01	$3.95 1.75	$9.18 6.03
4.	74 25	65 26	72 65	43 28	91 72	85 59
5.	123 78	137 59	160 93	$1.23 .74	$1.61 .84	$1.50 .66
6.	852 417	771 738	996 267	783 126	872 549	640 138
7.	542 480	815 440	249 63	944 880	487 96	342 72
8.	821 239	915 297	757 558	310 73	873 379	413 67
9.	300 194	902 584	701 306	990 502	940 257	700 619
10.	$6.48 5.39	$6.70 4.35	$3.68 .97	$8.75 3.57	$2.00 1.08	$6.01 4.10

	a	b	c
11.	342 − 83	$1.06 − 97¢	$2 − 76¢

Remembering Multiplication

Copy and find the products.

	a	b	c	d	e	f
1.	42 × 2	23 × 3	12 × 4	73 × 2	81 × 5	62 × 4
2.	314 × 2	212 × 4	132 × 3	111 × 5	213 × 3	421 × 2
3.	40 × 5	90 × 4	80 × 3	203 × 2	120 × 4	300 × 3
4.	25 × 3	48 × 2	67 × 5	85 × 4	94 × 3	59 × 2
5.	\$ .39 × 5	\$ .74 × 4	\$ .67 × 3	\$ .25 × 5	\$ .69 × 2	\$ .93 × 4
6.	\$4.21 × 2	\$1.03 × 3	\$1.09 × 5	\$3.07 × 2	\$2.18 × 3	\$2.06 × 4

Remembering Division

Copy, divide, and check.

	a	b	c	d	e
7.	$2\overline{)86}$	$3\overline{)69}$	$2\overline{)42}$	$4\overline{)48}$	$3\overline{)93}$
8.	$4\overline{)208}$	$3\overline{)183}$	$2\overline{)106}$	$5\overline{)405}$	$3\overline{)279}$
9.	$3\overline{)693}$	$2\overline{)246}$	$4\overline{)484}$	$3\overline{)936}$	$5\overline{)555}$
10.	$3\overline{)240}$	$2\overline{)184}$	$5\overline{)355}$	$4\overline{)360}$	$5\overline{)100}$
11.	$4\overline{)408}$	$2\overline{)200}$	$3\overline{)609}$	$2\overline{)820}$	$5\overline{)505}$

Can You Handle Numbers?

Diagnostic Check Test 4A

This test will show you how much you have learned about the four processes this year. Can you add, subtract, multiply, and divide? Make sure every answer is right.

Copy and add.

	a	*b*	*c*	*d*	e
1.	58 63	427 478	293 596	$3.49 1.05	$8.64 .96

Copy, add, and check.

2.	4 7 5 8 3	59 11 70 8	$ .37 .95 .78 .96	364 42 825	$6.98 6.40 .65

Copy, subtract, and check.

3.	150 76	685 309	716 417	$3.24 .98	$8.00 5.23

Copy and multiply.

4.	26 3	$ .52 4	$ .84 5	203 3	$4.10 2

Copy, divide, and check.

5.	$3\overline{)609}$	$4\overline{)284}$	$5\overline{)305}$	$4\overline{)168}$	$3\overline{)270}$
6.	$2\overline{)240}$	$4\overline{)240}$	$3\overline{)186}$	$2\overline{)186}$	$5\overline{)400}$
7.	$3\overline{)156}$	$5\overline{)155}$	$4\overline{)208}$	$4\overline{)804}$	$5\overline{)100}$

Do You Understand Numbers?

Diagnostic Check Test 4B

This test will show you how much you have learned about the meaning of numbers. Number your paper 1 through 18, and write your answers on it.

1. How many ounces are there in $\frac{1}{2}$ pound?

2. $\frac{1}{3}$ dozen oranges is how many oranges?

3. Which is longer, 11 inches or 1 foot?

4. Which is more, $\frac{1}{4}$ dozen or $\frac{1}{2}$ dozen?

5. What measure is twice as much as a pint?

6. What coin is worth half as much as a dime?

7. In the number 1,485, which figure tells the number of tens?

8. Write one thousand thirty-two in figures.

9. Write the date nineteen fifty-six in figures.

10. Which number is smaller, 1,342 or 1,196?

11. Which is more, a quarter and a dime or 30¢?

12. What number comes just after 999?

13. How many 4's are there in 20?

14. What number is $\frac{1}{3}$ of 18?

15. Four 7's = what number?

16. What other multiplication fact belongs with $3 \times 8 = 24$?

17. What other division fact goes with $12 \div 3 = 4$?

18. What numbers do you multiply to check the example $124 \div 4 = 31$?

Can You Use Numbers?

Diagnostic Check Test 4C

The 17 problems in this test will show you how well you can use numbers in problems. Before you work a problem, decide whether you should add, or subtract, or multiply, or divide to find the answer. Do your work and write your answers on another paper.

1. The temperature outdoors is 18°. Indoors it is 70°. How many degrees warmer is it indoors than it is outside?

2. Joe practices with his trumpet 25 minutes a day. How many minutes will he practice in 5 days?

3. Mary had $6.37 in her bank. Then she put in 75¢ more. How much money did she have in her bank then?

4. Jill was 49 inches tall last year. Now she is 53 inches tall. How many inches has she grown in the year?

5. Ellen needs 15 lemons to make lemonade for her party. At 5¢ each, how much will the lemons cost?

6. It is 21 days till Ann's birthday. How many weeks equal 21 days?

7. Bill has 12 cents. He wants to spend it for marbles. How many 2-cent marbles can he get for 12 cents? How many 3-cent marbles could he get?

(Continued on page 250)

8. Don weighed 63 pounds. His dog got on the scales, too. Together they weighed 82 pounds. How many pounds did the dog weigh?

9. Ann's mother bought her a skirt for $4.98 and a blouse for $1.20. How much did both cost together?

10. Jill counted 17 roses on one bush, 21 on the second, 9 on the third. How many roses were there on the three bushes?

11. Don has 36 lettuce plants to set out in 4 equal rows. How many should he put in each row?

12. Jim's father gave him 55 pennies. Jim wants to change them into nickels. How many nickels will they make?

13. Sally's family uses paper cups for picnics. Sally bought 5 boxes of cups, with 25 cups in each box. How many cups did she buy?

14. Sue has 36 cherries. She wants to share them equally with Jill and Nora. How many cherries should each of the girls get?

15. Barbara wants a Halloween costume. A ghost costume costs $1.35. A witch costume costs $2.18. How much less is the ghost costume?

16. One kind of ice cream costs 90¢ a quart. If Ellen buys 3 quarts for a party, how much must she pay?

17. Jerry bought four stamps that cost a nickel apiece. How much money did he spend?

Enrichment Section

Pages 251-312 have some interesting arithmetic for those who especially like arithmetic and who have finished their regular work. A note at the bottom of each page in this section tells just when the page is to be used. For example, pages 251 and 252 are to be used after page 28 has been finished.

Do You Add or Subtract?

In some of these problems you add. In other problems you subtract. Work the problems on another paper. Tell whether you added or subtracted in each problem.

1. Bob took Sam with him to gather eggs. Sam found 5 in one nest and 3 in another nest. Bob said, "How many eggs did you find in all?" What should Sam answer?

2. Bill and Ann played train with chairs. Bill put 6 chairs in the train and Ann put 3 more in it. How many children could ride in their train if one child rides in each chair?

3. Our teacher bought 8 new books for our library. I have already read 2 of them. How many more new books are left for me to read?

4. Mary mailed a letter for her mother. She bought a 3-cent stamp and gave the clerk a dime. How many cents did she get back?

Pages 251 and 252 are to be used after page 28.

5. Dick bought a pencil for 5 cents and an eraser for 2 cents. How many cents should he give the clerk for both?

6. Tom is 8 years old. His sister Mary is 5 years old. His teacher asked, "How much older are you than Mary?" What should Tom answer?

7. Joe's music teacher is giving him 10 trumpet lessons. Joe has already taken 4 lessons. How many more will he have?

8. Nora's aunt gave her 2 books for her birthday. Nora's mother gave her 6. How many new books did Nora get for her birthday?

9. Jill took 7 sandwiches to school for herself and Sue. Sue wanted 3 sandwiches. How many did Jill have left for her own lunch?

10. Ann had 9 cents. She bought an ice cream cone for 5 cents. How many cents did she have left?

11. Sue had 7 cents. Her father gave her 3 more pennies that were in his pocket. How much money did Sue have then?

12. Dick bought 5 cents' worth of sunflower seed for his bird feeding box. He bought 4 cents' worth of suet. How much did he spend for both the sunflower seed and the suet?

13. There were five boys and five girls at Helen's birthday party. How many children were there at the party?

Pages 251 and 252 are to be used after page 28.

Problems With Two-Figure Numbers

Work these problems on another paper. After the number of each problem on your paper, write **Add** or **Subtract** to show how you worked it.

1. From the first grade, 23 children are going to a show. From the second grade, 25 are going. How many seats will both classes need?

2. Ann's mother had 96 stamps. Ann put 83 of them on Christmas cards. How many stamps were left?

3. There were 13 boys and 12 girls in Bill's third-grade room. How many children were in the class?

4. Don bought a pocket knife for 65¢. He gave the clerk 75¢. How many cents should he get back?

5. Don set out 36 cabbage plants. Rabbits ate 16 of them. How many plants did Don have left?

6. Linda bought some Christmas cards for 21¢. She gave the clerk a quarter. How much change should she get?

7. Mary and her mother went to a movie. Mary's ticket was 35¢. Her mother's was 53¢. How much did both tickets cost?

8. Our room library has 89 books. We counted only 60 books today. How many books are out?

9. Sally had 75¢ before she got some oranges. After she paid for them, she had 14¢ left. How much did the oranges cost?

This page is to be used after page 35.

Reading a Calendar

November						
Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Last Month

October						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24/31	25	26	27	28	29

Next Month

December						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

1. Look at the part of a calendar above. If November is this month, what month was last month? What month will next month be?

2. On this calendar, the names of the days of the week are abbreviated. **Sun.** is an abbreviation for **Sunday.** Tell the full names of the other days.

Pages 254 and 255 are to be used after page 37.

3. Thanksgiving always falls on the *fourth Thursday* in November. On what day of the month does Thanksgiving come on this calendar?

4. Halloween is on the 31st of October. On what day of the week was Halloween on this calendar?

5. The 25th of December is Christmas Day. On what day of the week did Christmas come?

6. How many days are there in October?

7. How many days does November have?

8. How many days does December have?

9. How many days are there in November and December together?

10. How many days are there in October and November together?

11. How many more days does December have than November?

12. On what day of the week does October start on this calendar? On what day does November start? December?

13. On what day of the week is the last day of October? The last day of November? The last day of December?

14. Bill's club meets on the same day each week. They met on November 8th. What is the date of their next meeting?

15. Write the dates of any birthdays of your classmates that come in these three months.

Pages 254 and 255 are to be used after page 37.

Finding the Missing Number

Sometimes you subtract to find the missing number. See if you can find the missing number in each problem. Write the missing numbers.

1. Tom knows that he had 48 cents in his pocket when he went into the store. When he left the store he had only 36 cents. How many cents has he spent?

2. There are 27 children in our class. Only 23 children are here today. How many children are absent?

3. On Monday, Jean had 56 cents. On Wednesday, she had only 14 cents left. How much had she spent?

4. Jean counted 19 monkeys in the monkey yard at the zoo. When she came back, there were only 7 monkeys in the yard. How many monkeys must have gone into the monkey house?

5. Sue made 18 sandwiches for the picnic. She brought back 5 sandwiches that had not been eaten. How many sandwiches must have been eaten?

6. Nancy started to practice her piano lesson at 4 minutes after 5 o'clock. Now it is 16 minutes after 5. How many minutes has Nancy practiced?

7. There were 37 books in the reading corner of Jill's classroom before the children started to borrow them. Now there are only 20 books there. How many books have the children borrowed?

Pages 256 and 257 are to be used after page 49.

8. Dick had a dozen big nails. Now he has only 4 nails. How many of the nails must he have used?

9. Bill was playing a game of tenpins. He rolled the ball at 10 pins that were standing. Three pins were left standing. How many had Bill knocked down?

10. Don and his father set out 59 strawberry plants. Forty-nine of the plants lived. How many of the plants had died?

11. Mother said, "I made 77 glasses of jelly. Now I count 22 glasses. How many glasses must we have eaten?"

12. Barbara's aunt gave her 24 Christmas cards. Barbara has 11 left. How many cards must she have used?

13. Yesterday, Mother bought a dozen eggs. Now there are 7 in the box. How many eggs has she used?

14. Twenty-nine children got on the bus at school. Now I count 16 children. How many children must have got off?

15. Our favorite radio story starts 20 minutes after 12. It is 10 minutes after 12 now. How long must we wait?

16. Ellen had a box of 75 party napkins. Only 40 are left. How many must she have used for her parties?

17. Sam threw 20 snowballs at a tree. Only 9 of them hit the tree. How many missed the tree?

Pages 256 and 257 are to be used after page 49.

Making Up Problems

A teacher told her class that each child might make up a problem using an addition or subtraction fact. The rest of the class could work the problem. Here are some of the children's problems. Can you work them too? You may tell the answers or write them on another paper.

1. Tom's problem. "I counted the chairs in the front of our room. There were 7 in one row and 9 in the other. How many were there in both rows?"

2. Bill's problem. "There were 13 boys on our baseball team. When 9 of the boys are playing, how many boys must sit on the bench?"

3. Peggy's problem. "My brother Jack is 14 years old. I am 5 years younger than he is. How old am I?"

4. Jean's problem. "I bought 5 cents' worth of fudge and 8 cents' worth of taffy. How much did I give the clerk to pay for both kinds of candy?"

5. Jerry's problem. "I have 12 stamps to put on a page. If I put 8 stamps in one row, how many stamps will I have to put in the second row?"

6. Dave's problem. "I invited 6 boys and 7 girls to my birthday party. How many invitations did I have to write?"

7. Jim's problem. "I bought 12 bananas for Mother. We ate 4 of them for lunch. How many were left?"

Pages 258 and 259 are to be used after page 59.

8. Ellen's problem. "I had 9 cents in my purse. Mother said she would give me 5 pennies if I could tell her how much I would have then. How many cents did I tell her I would have?"

9. Dick's problem. "There are 12 months in a year. We go to school for 9 months. How many months does that leave us for vacation?"

10. Ann's problem. "I have a nickel in my bank and 7 pennies in my purse. How many cents do I have altogether?"

11. Ben's problem. "Our teacher gave me 17 tickets to sell for our pet show. I have 9 tickets left to sell. How many tickets have I sold?"

12. Mary's problem. "Father bought two strips of bus tickets to ride to work. There are 8 tickets in each strip. How many rides will the tickets give Father?"

See if you can make up addition problems about:

13. 9 boys and 7 girls.

14. 6 cents and 8 cents.

15. 8 marbles and 5 marbles.

16. 7 flowers and 6 flowers.

Make up subtraction problems about:

17. 10 cents and 7 cents.

18. 15 books and 8 books.

19. 7 kittens and 4 kittens.

20. 13 birds and 5 birds.

Pages 258 and 259 are to be used after page 59.

How the Romans Wrote Numbers

You have learned that the Romans lived long ago, and that they used letters to write their numbers. They used I for 1, V for 5, and X for 10.

Roman letters placed side by side do not mean ones, tens, and hundreds as the figures in our numbers do. If the letters are the same, the numbers for which they stand are added. So,

III = 1 + 1 + 1, or 3. XXX = 10 + 10 + 10, or 30.

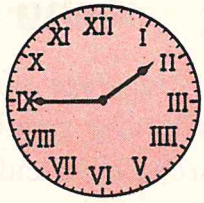
If a **smaller Roman number,** like I, is placed **before** a larger Roman number, like V, the smaller number is subtracted from the larger. So IV means 5 − 1, or 4. IX means 10 − 1, or 9.

If the smaller Roman number **follows** the larger one, it is to be added to it. VI means 5 + 1, or 6.

XV = 10 + 5, or ? XVI = 10 + 5 + 1, or ?

Pages 260 and 261 are to be used after page 63.

1. Look at this picture of an old clock with Roman numbers. How many Roman letters are used to make the number 4? In what other way can the number 4 be made with Roman letters?



2. Fourteen = 10 + 4, so the Romans wrote 14 as XIV. Nineteen = 10 + 9. How would you write 19 as a Roman number? On your paper, write in Roman numbers: 13, 17, 18.

3. How many are 10 and 10? How would you write 20 as a Roman number? On your paper, write in Roman numbers: 21, 22, 23, 24.

4. Twenty-nine = 20 + 9. How would you write 29 with Roman letters? Write with Roman letters: 26, 27, 28.

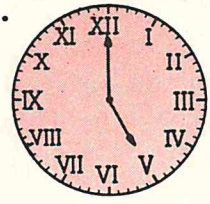
5. What does XVII mean? How do you know?

6. Read XXIV, and tell how it is made.

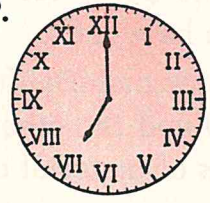
7. Read these Roman numbers and tell how each is made. XXII XVI XXVIII XIX XXIX XXIV

What time does each of the clocks show?

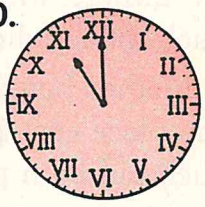
8.



9.



10.



Pages 260 and 261 are to be used after page 63.

Using Three-Figure Numbers

Here are some addition and subtraction problems with big numbers in them. Before you work each problem, decide whether you will add or subtract.

1. In the Wilson School, there are 234 boys and 245 girls. How many children go to that school?

2. The Lee School has 398 pupils. One stormy day, only 284 children came. How many were absent?

3. On a trip, Tony's father drove 476 miles one day and 342 miles the next. How many miles farther did he drive the first day than the second?

4. Ann's mother had $5.75 in her pocket-book. She bought Ann an Easter hat for $3.50. How much did her mother have left?

5. Linda had $7.34 in her coin bank. She put in $1.50 that her father gave her for her birthday. How much money did Linda have then?

6. On another trip, Tony's father drove 371 miles the first day and 416 miles the second day. How many miles did he drive on both days?

7. Jill's mother gave her $1.85 to buy a present for her father. Jill spent $1.50 for the present. How much money did she have left?

8. Mother bought some material for dresses for Ann. One piece cost $1.69 and the other cost $2.20. How much did both pieces of material cost?

Pages 262 and 263 are to be used after page 81.

9. The Lee School had 643 books in its library. The parents bought 145 new books for the school. How many books were there in the library then?

10. Last year Jerry had 237 stamps in his collection. This year he has 848 stamps. How many stamps has he collected this year?

11. Allen wants to buy a camera costing $4.85. He has saved $3.60. How much does he still need?

12. Sue helped her mother can vegetables and fruit last summer. They canned 123 jars of vegetables and 64 jars of fruit. How many jars did they can?

13. Larry weighs 76 pounds. His father weighs 158 pounds. Larry weighs how much less than his father?

14. Don's father had 116 chickens on his farm. He sold some of them and had 90 chickens left. How many chickens must he have sold?

15. One day Sally's mother spent $4.46 for groceries and $2.50 for meat. How much did she spend for both meat and groceries?

16. The children in Ann's room had a cookie sale. They took in $6.75. They spent $3.33 for materials to make the cookies. How much money did they make?

17. Don helped pack two boxes of apples. There were 104 apples in one box and 94 apples in the other box. How many apples were in both boxes?

Pages 262 and 263 are to be used after page 81.

Some Addition Quickies

See if you can do all these problems in your head. Just tell the answers or write them on another paper.

1. There were 17 children on the school bus. At the next stop, 5 more children got on. How many children were on the bus then?

2. Jim bought some hard candies for 18¢ and a banana for 5¢. How many cents did he pay for both?

3. Ann had a string of 16 lights for her Christmas tree. Her father bought her a new string of 8 lights. How many lights did she have then in all?

4. Tom had 24 cents left from his spending money at the end of the week. His mother gave him 9 pennies. How many cents did he have then?

5. Jerry's mother is 29 years old. His father is 5 years older than his mother. How old is his father?

6. Sally went to the store for her mother. She bought a can of peas for 17¢ and a bunch of carrots for 8¢. How much did she spend?

7. Ellen gave a Christmas party. There were 13 girls and 9 boys. She bought a gift for each of them. How many gifts did she buy?

8. Ellen bought 15 cupcakes with red icing and 9 with green icing on them. How many cakes did she buy in all?

Pages 264 and 265 are to be used after page 85.

9. Sam and Don were talking about fishing. Don said, "I caught 16 fish last month." Sam said, "Then I caught 9 more than you did." How many fish had Sam caught?

10. Tom watches the weather. He kept a temperature record for a month. One morning the thermometer said 24°. By afternoon, Tom said it was 8 degrees warmer. What was the temperature then?

11. Ann made 17 points in one game of ring toss. She made 7 in the next game. How many points did Ann make in both games?

12. At the post office, Jim bought some stamps for his mother for 33¢, and some postcards for 8¢. How much did he pay in all?

13. Sally had 86 fancy buttons in her collection. Her aunt sent her 5 more. How many buttons did Sally have then?

14. Bill threw snowballs at a tree. He hit the tree 19 times and missed twice. How many snowballs did Bill throw?

15. Lucy weighs 58 pounds. Her cat, Tippy, weighs 9 pounds. If they are weighed together, how many pounds should the scales read?

16. If today is the 16th of the month, what will be the date one week from today?

17. Jim has a quarter and a nickel. How much money has he?

Pages 264 and 265 are to be used after page 85.

Buying Lunch at School

Price List	
Apple	4¢
Baked Beans	7¢
Butter	1¢
Cake	7¢
Corn	6¢
Ice Cream	5¢
Jello	6¢
Meat Loaf	9¢
Milk	5¢
Orange	5¢
Peas	4¢
Potatoes	4¢
Rolls, each	3¢
Salad	8¢
Soup	6¢

This price list gives the cost of some things at a school cafeteria.

See if you can add more than three numbers. On your paper, write the things each child buys. Put down the cost of the things in each lunch. Then add to find the total cost of each lunch. Check each answer.

1. Ann's Lunch

Meat loaf	?
Potatoes	?
One roll	?
Butter	?
Milk	?
Cost of lunch	?

2. Jerry's Lunch

Soup	?
Salad	?
Peas	?
Ice cream	?
Milk	?
Cost of lunch	?

3. Jean's Lunch

Soup	?
Salad	?
Cake	?
Jello	?
Milk	?
Cost of lunch	?

Pages 266-269 are to be used after page 89.

4. Mary's lunch was meat loaf, potatoes, peas, cake, and milk. How much did the lunch cost?

5. Bill's lunch was salad, baked beans, corn, cake, and milk. Find the cost of Bill's lunch.

6. Peggy's lunch was one roll, butter, meat loaf, corn, and milk. How much did Peggy pay for lunch?

7. Ellen's lunch was soup, an apple, salad, milk, and jello. How much did Ellen's lunch cost?

8. Tom got meat loaf, potatoes, one roll, butter, and ice cream. Find the cost of his lunch.

9. Nancy's lunch was potatoes, butter, an orange, cake, and ice cream. How much did her lunch cost?

10. Which lunch cost more, Ann's lunch or Jerry's lunch? How much more did it cost?

11. Which of these 9 lunches would you like best for yourself? Why?

12. Pick out a lunch for yourself from the list on page 266 and find the total cost. Don't pick more than five things.

A Letter Puzzle

cut a race

These three words don't make sense. You can make the letters into one word by moving them around. Write the fourth letter first, then the seventh letter, then the first letter, the second, the fifth, the sixth, the third, and the eighth. Is the word you made important in arithmetic?

Pages 266-269 are to be used after page 89.

Adding Longer Columns

Here are some more problems in which you add several numbers. Do your work on another paper. Be careful to copy the numbers in a straight column. Add down and check by adding up.

1. Bill and Ann were playing ring toss one day. In six throws Ann made these scores: 6, 3, 9, 2, 0, and 8. What was her total score for that game?

2. In the next game of ring toss, both Bill and Ann made 7 throws apiece. Bill made these scores: 5, 8, 3, 9, 0, 7, and 4. What was his total score for the game?

3. For lunch at school, Jean wanted to buy these things: roll (3¢), butter (1¢), milk (5¢), baked beans (7¢), apple (4¢), and ice cream (5¢). How much would this cost in all?

Pages 266-269 are to be used after page 89.

4. Jerry was hungry today and ate a big lunch. He had meat loaf (9¢), a roll (3¢), butter (1¢), potatoes (4¢), corn (6¢), cake (7¢), and milk (5¢). Find the total cost of Jerry's lunch.

5. Bob gathered eggs when he came home from school. He found 5 eggs in one nest, 4 in the next, 3 in the third, 6 in the fourth, 4 in the fifth, and 2 in the sixth. How many eggs did he find in all?

6. Dave's class had a sale of old toys. Dave was the clerk. A second-grade boy bought a top (3¢), a truck (9¢), a book (7¢), some marbles (8¢), a puzzle (6¢), and a ball (9¢). How much did Dave charge him?

7. Don helped his father pick strawberries one week. He picked 5 quarts on Monday, 7 quarts on Tuesday, 6 on Wednesday, 8 on Thursday, 4 on Friday, and 9 on Saturday. How many quarts did he pick that week?

8. Sally's mother asked her to get some groceries at the store. Sally bought: a small can of soup (9¢), some onions (8¢), a bunch of carrots (7¢), soap (8¢), a tomato (6¢), and a small head of cabbage (9¢). How much did Sally pay for all these things?

9. In the nine innings of a baseball game, Bill's team made these runs: 0, 0, 2, 1, 5, 0, 3, 0, 4. How many runs did they make in the whole game?

10. In this game, Tony's team made 0, 1, 3, 4, 0, 0, 2, 0, 1 runs. What was their total score?

Pages 266-269 are to be used after page 89.

Some Problems With Carrying

See how well you can use addition with carrying in problems. Do your work on another paper.

1. Don sold some beans for 19¢ and some tomatoes for 27¢. How much did he get for both?

2. Nancy practiced her piano lesson 15 minutes yesterday and 25 minutes today. How many minutes has she practiced in all?

3. Sally paid a quarter for some ribbon for her hat, and 29¢ for a flower. How much did she spend for both things?

4. Dick counted 46 coal cars and 49 cattle cars on a freight train. How many cars of these two kinds did the train have?

5. Tom counted his shell collection. He had 46 shells in one box and 25 shells in another. How many shells did he have in all?

6. Sue bought some cookie mix for 27¢ and some nuts for 45¢. How much money did she spend?

7. In one day at his fruit stand, Don's father sold 58 baskets of peaches and 39 baskets of apples. How many baskets of fruit did he sell altogether?

8. On a trip one day Sam's family drove 29 miles the first hour and 45 miles the second hour. How many miles did they drive in two hours?

Pages 270 and 271 are to be used after page 99.

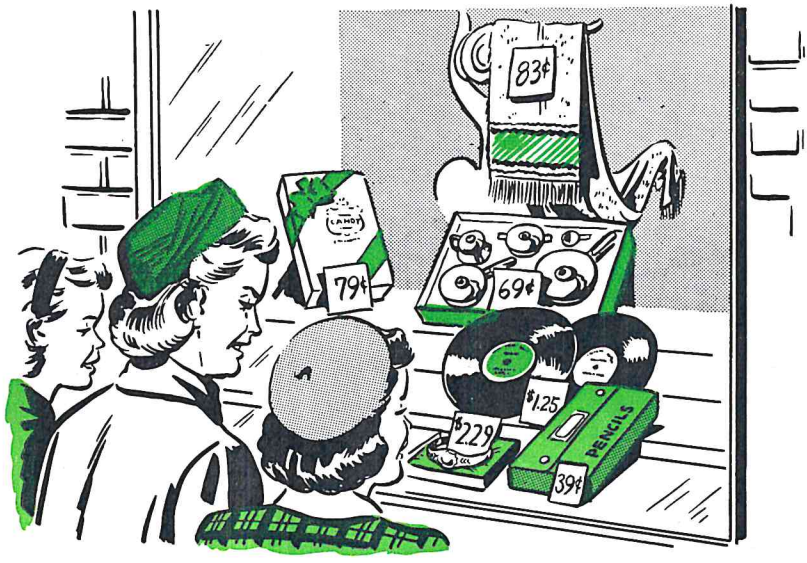
Thinking About Numbers

See how much you know about numbers. Write your answers on another paper.

1. What number must be added to 9 to make 16?
2. What number is 6 less than 13?
3. What number is 3 more than 17?
4. Is 25 more or less than $9 + 14$?
5. Which is more, $8 + 5$ or $9 + 3$?
6. Which is more, 3 dimes or a quarter?
7. Which is less, 2 dimes or 3 nickels?
8. What is the sum of 17 and 8?
9. What is the difference between 17 and 8?
10. Write two addition facts using these numbers: 3, 4, and 7.
11. Write two subtraction facts using 6, 4, and 10.
12. Write four addition and subtraction facts that belong together, using 5, 7, and 12.
13. Write as many addition facts ending in 14 as you can. Two of them are $8 + 6 = 14$ and $6 + 8 = 14$.
14. Are there more addition facts ending in 15 or ending in 12?
15. How many subtraction facts can you think of that end in 5? One of these is $14 - 9 = 5$.
16. How many subtraction facts can you think of that start with 11? One of these is $11 - 3 = 8$.

Pages 270 and 271 are to be used after page 99.

Jill's Birthday



Jill's big sisters, Betty and Kay, went with Jill's mother to buy birthday presents for Jill. Here are some problems they had to work in buying these gifts. They used subtraction with borrowing to work most of them.

1. Betty thought that Jill would like to have a pencil box. She had a half dollar and bought the pencil box shown in the picture above. How much change did she get?

2. Kay thought Jill might like either the set of doll cooking dishes or the scarf shown in the picture. How much more did the scarf cost?

Pages 272 and 273 are to be used after page 101.

3. Kay decided to buy the doll cooking dishes. She handed the clerk a half dollar and a quarter. How much money is this? How much change did Kay get back?

4. Mother wished that she could buy both the bracelet and a record as presents from Father and her. How much would she have had to pay for both these things?

5. Mother decided to buy the bracelet for Father and her to give to Jill. How much change did she get back from $2.50?

6. Betty, Kay, and Mother decided to buy the box of candy for Jill. Mother handed the clerk 3 quarters and a nickel. How much is this? How much change did she get?

7. They wanted to buy a record, too. But they did not think they should spend more than 75 cents for it. How much more than 75¢ did the record cost?

8. Jill's Aunt Mary gave her $1.50. Jill bought a book about flowers for $1. She put the rest of the money in her bank. How much money did she put in her bank?

9. Jill's grandparents gave her $1.75. Jill bought a blouse for $1.30. How much did she have left to put in her coin bank?

10. How much birthday money did Jill put in her bank? (See Problems 8 and 9.)

Pages 272 and 273 are to be used after page 101.

Selecting the Process

In some of these problems you add to find the answer. In some you subtract. On your paper, write the numbers 1 to 13. After each number write **A** if you add in that problem or **S** if you subtract. Then work the problems on your paper. Write the answer after the **A** or **S.**

1. There are 15 boys and 16 girls in Sam's class. How many children are there in the class?

2. Dave had 83 cents. He bought a model airplane for 59 cents. How much money did he have left?

3. Jill's sister Betty weighs 86 pounds. She weighs 19 more pounds than Jill. How many pounds does Jill weigh?

4. Sally bought a quart of strawberries for 37¢. She gave the clerk a half dollar. What change did he give her?

5. Don and his father ate lunch in town. Don's lunch cost 74¢ and his father's was 89¢. How much were both?

6. Don weighed 63 pounds at the end of the school year and 71 pounds the next fall. How many pounds did he gain?

7. Sue's mother baked 36 white cupcakes and 48 chocolate cupcakes. How many cakes of both kinds did she bake?

Pages 274 and 275 are to be used after page 105.

8. Sally bought these things at the store: rolls (24¢), oranges (48¢), carrots (15¢), and apples (29¢). Find the total cost.

9. One day at school, Sue paid 28¢ for lunch. Bob paid 43¢ for lunch. How much more was Bob's lunch than Sue's?

10. Jill wanted 36 pansy plants in her garden. Her aunt gave her 19. How many more did she need?

11. Sue and Jill made two pans of fudge. There were 36 pieces of fudge in one pan and 28 pieces in the other pan. How many pieces of fudge did the girls make?

12. Larry is 51 inches tall and Joe is 48 inches tall. How much taller than Joe is Larry?

13. Bill's pack of Cub Scouts made popcorn balls to sell. They paid 62¢ for the popcorn and other materials, and sold the popcorn balls for $1.55. How much money did they make?

A Word Puzzle

Use easy you to is problem if solving which know process a.

The sentence above will make sense if you move the words around. Write the eighth word first, then the twelfth, then the sixth word, then the fifth, second, seventh, third, tenth, ninth, eleventh, fourth, first. Is your sentence true?

Pages 274 and 275 are to be used after page 105.

Do You Add or Subtract?

Work these problems on another paper. After the number of each problem, write **A** if you added or **S** if you subtracted. Then write the answer.

1. Jean wants a 35¢ pencil box. She has only 26¢. How much more does she need to buy the box?

2. Jean saved 35¢ in May, 43¢ in June, and 68¢ in July. How much did she save those three months?

3. If Bob's lunch cost 38¢ and Sue's lunch cost 29¢, how much were both lunches together?

4. Bob gave the clerk 75 cents for both the lunches. How much change did he get back?

5. Ellen's lunch cost 42¢. How much change did she get from a half dollar?

6. At a school picnic, there were 25 boys, 27 girls, and 2 teachers. How many lunches had to be fixed?

7. Jean is 49 inches tall. How many inches shorter is she than her father, who is 71 inches tall?

8. Don's father owes Don 60¢. Don owes his father 27¢ for tomato plants. How much should his father pay Don?

9. Bill bought a truck for 78¢. He gave the clerk 85¢. How much change did he get?

10. If you had a half dollar, a quarter, two dimes, and a nickel, how much money would you have?

Pages 276-279 are to be used after page 111.

Numbers You Don't Need

Each problem on this page has an **extra number** that you don't need to find the answer. Why don't you need the **3** in the first problem? On your paper, write the extra number, then work each problem.

1. Jean bought a tablet for 10 cents on Monday, a pencil for 5 cents on Tuesday, and an eraser for 4 cents on Wednesday. How much did Jean spend in all, on these 3 days?

2. Tom weighed 65 pounds when he was 8 years old. When he was a year older, he weighed 72 pounds. How many pounds did he gain that year?

3. Don earned 70 cents picking 10 boxes of strawberries. He spent 45 cents and put the rest in his savings account. How much did Don put in his savings account?

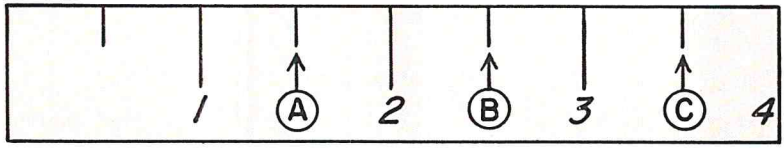
4. Ann spent 12 cents for 2 cupcakes, 15 cents for a box of crackers, and 24 cents for some bananas. How much did Ann spend?

5. At her aunt's house one day, Jill spent 10 minutes drying 8 cups and saucers, 15 minutes dusting, and 20 minutes running an errand. How many minutes did she spend helping her aunt?

6. Jerry bought 48 new stamps for 50¢. He sold 29 old stamps to Tom. How many more stamps did Jerry buy than he sold to Tom?

Pages 276-279 are to be used after page 111.

Using Half Inches To Measure



1. Look at this picture of a ruler. Each longer mark shows an inch. Each shorter mark between the inches shows a **half inch.** How many half inches are there in one inch?

2. Point to the mark that shows 1 inch. Find 3 inches on the ruler. Find 2 inches. Find 4 inches.

3. Arrow A shows one and one half inches. What does Arrow B show? What does Arrow C show?

4. Put a piece of paper just below the marks on the ruler and make your own ruler.

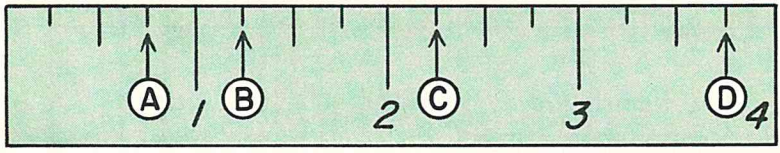
---

5. Use your ruler to measure the length of this line. The line is ? and one half inches long.

6. Allen trimmed one of the pictures he took with his camera. The drawing at the left shows the size of his picture. Use your ruler to measure it. How long is it? How wide?

Pages 276-279 are to be used after page 111.

Using Quarter Inches



1. This picture of a ruler shows quarter inches as well as inches and half inches. The marks for quarter inches are shorter than the half-inch marks. A **quarter** of an inch is the same as a **fourth** of an inch. How many quarter inches are there in each inch? How many quarter inches are there in each half inch?

2. Arrow A points to three quarters of an inch. Arrow B shows 1 and one quarter inches. What does Arrow C show? What does Arrow D show?

3. On the picture of the ruler, find 1 and three fourths inches. Find 3 and one fourth inches.

4. Make a ruler like the ruler above.

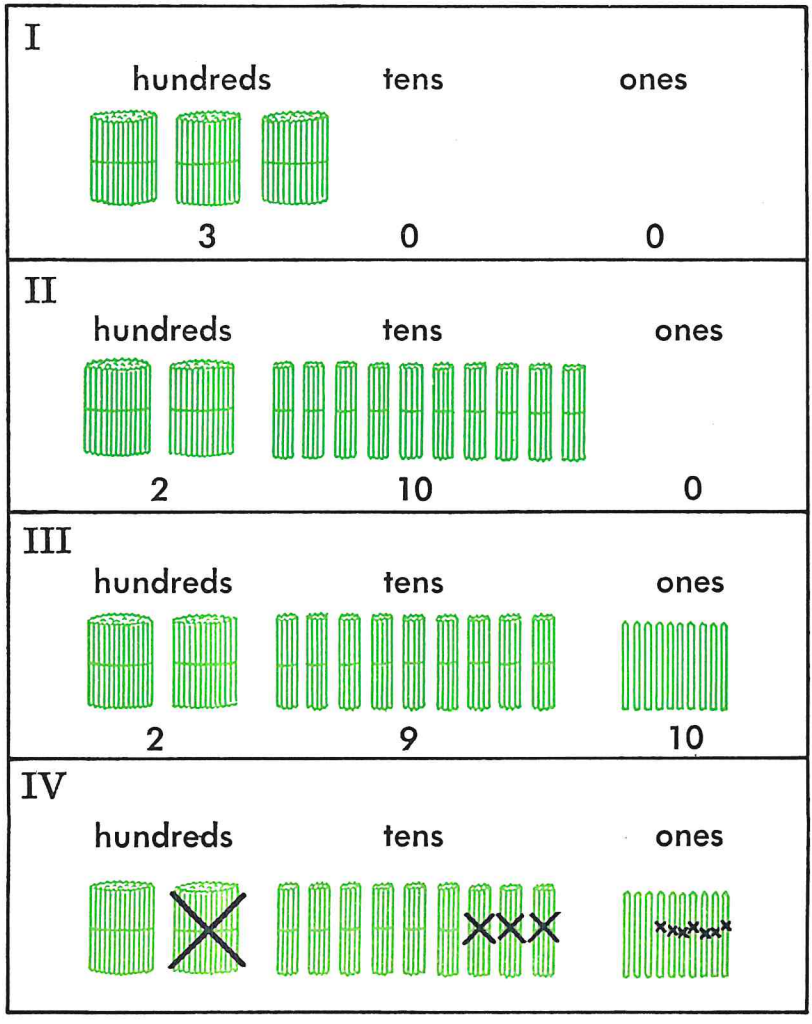
5. Use your ruler to measure the line above. How long is it?

6. See if you can find the quarter-inch marks on a real ruler. Draw a line you think is 6 inches long. Measure your line to the nearest quarter inch to see how long you made it.

7. Which is longer, two and one half inches or two and three quarters inches? Four and one quarter inches or four and one half inches?

Pages 276-279 are to be used after page 111.

Subtracting from Two Zeros



Bill explained to the class how to subtract 137 from 300. These four pictures show how he did it.

Pages 280 and 281 are to be used for enrichment after page 119.

1. Bill took 3 bundles of 100 toothpicks each. In each bundle, there were 10 bundles of 10 toothpicks each. (Picture I)

hundreds	tens	ones
3	0	0
1	3	7
1	6	3

Since there were no ones from which to subtract 7 ones and no tens from which to subtract 3 tens, Bill took the rubber band from one of the hundred-bundles. This bundle was changed into 10 bundles of 10 toothpicks each (see Picture II), for the tens column.

Then Bill took one of the bundles of 10 toothpicks and turned it into 10 single toothpicks, for the ones column. (Picture III)

He took away 7 of the single toothpicks, 3 of the 9 ten-bundles, and 1 of the 2 hundred-bundles. How many hundreds, tens, and ones are left?

Subtract. Remember the point and dollar sign in money examples.

	a	*b*	*c*	*d*	*e*
2.	300 241	700 325	900 534	700 278	800 183
3.	500 247	\$8.00 1.79	\$2.00 .28	\$3.00 2.53	\$5.00 2.05

	a	*b*	*c*
4.	600 — 362	400 — 316	900 — 701
5.	\$8.00 — \$3.94	\$1.00 — 39¢	\$5.00 — \$3.57
6.	\$5 — \$1.75	\$9 — \$6.88	\$2 — 43¢

Pages 280 and 281 are to be used after page 119.

Making Questions for Problems

These problems are not finished. In each one, read carefully the facts the problem gives. Then make up a question for the problem to ask. Can you answer your own questions and work the problems?

1. For lunch one day, Tom bought: milk (5¢), ice cream (5¢), meat (12¢), potatoes (4¢), and a sweet roll (4¢).

2. Sally went into the store with 93 cents. She bought a present for her mother costing 75 cents.

3. Ann looked to see how much money she had. She had 2 nickels, a quarter, and 8 pennies.

4. Bob's father weighs 155 pounds. Bob weighs only 76 pounds.

5. Jean had a collection of 68 picture post cards. Her aunt gave her 25 more post cards.

6. Sue's allowance is 50 cents a week. She puts 15 cents of this into her savings bank.

7. Bill has 38 marbles. Tom has 29 marbles.

8. Joyce is 50 inches tall. Her little sister is 43 inches tall.

9. Jean wants to buy a game costing 75 cents and a puzzle costing 48 cents.

10. Sue made 12 cookies in one pan and 8 cookies in another pan.

Pages 282 and 283 are to be used after page 143.

What Is Missing?

There is something missing in each of these problems. In some problems there is no question asked. In some problems, a fact is missing.

Can you finish each problem and find the answer?

1. Bill and Jerry were playing a game of ring toss. Bill made 15 points. How many more points did he make than Jerry made?

2. Sally went to the store to buy some groceries for her mother. When she went into the store she had $1.00. When she left the store she had 23 cents.

3. At the zoo, Jean saw two cages of monkeys. There were 9 monkeys in one cage. How many monkeys were there in both cages?

4. On Monday, Joe practiced 15 minutes on his trumpet. On Tuesday, he practiced 20 minutes.

5. Jean wants to buy a box of paints costing $2.50. How much more money does she need?

6. Larry weighs 78 pounds. How much do Larry and his dog weigh together?

7. We took 52 sandwiches to our picnic. How many sandwiches were left after the picnic?

8. Tom earned 75 cents for cutting the grass and 50 cents for weeding the garden.

9. Don sold some corn for 45 cents. How much did he get for both the corn and the tomatoes?

Pages 282 and 283 are to be used after page 143.

Do You Multiply or Divide?

Read each problem carefully. Decide whether you multiply or divide. Then write the answer on another paper. These problems are quickies. Use your pencil only to write the answers.

1. Ellen bought 7 little candles for 2 cents each. How much did she pay for all seven?

2. Linda's mother gave her $\frac{1}{2}$ dozen eggs to color for Easter eggs. How many eggs was this?

3. Ann is getting 2 cookies for herself and each of her 5 playmates. How many cookies must she get?

4. Sally bought a half pound of cheese. There are 16 ounces in a pound. How many ounces of cheese did she buy?

5. A foot rule is 12 inches long. My small rule is 6 inches long. What part of a foot is it?

6. If there are 9 boys on a baseball team, how many boys will it take to make two baseball teams?

7. Sue picked 10 apples. How many children could have two apples apiece?

8. A pint of milk will give 2 children a glass apiece. How many children will 8 pints serve?

9. Ben's mother had 18 buns. She gave him half of them for a picnic. How many buns did Ben get?

10. Plums were 2 cents each at the store. Mary bought 6 for a picnic. What did she pay for them?

Pages 284 and 285 are to be used after page 145.

11. Jerry is buying 8 picture postcards costing 2 cents each. How much will he have to pay?

12. Sam and Bob bought 14 marbles. Each took half of them. How many marbles did each boy get?

13. Ben's mother said, "I mended 4 pairs of socks for you, Ben." How many socks was this?

14. Ann and Jean hunted four-leaf clovers. Each girl found 8. How many clovers did they find in all?

15. Two small notebooks cost 16¢. Sue and Bob share the cost equally. How much does each pay?

16. Eight children are to do a folk dance. How many pairs of dancers will this be?

17. If four children have two ice cream cones apiece, how many ice cream cones will this be?

18. Fourteen boys want to play a game. If they make two equal teams, how many will be on a team?

19. Sue is making sandwiches. If there are 18 slices in each loaf of bread, how many sandwiches will each loaf make?

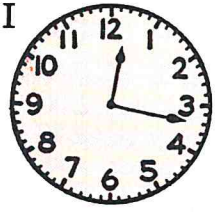
Minding the Signs

Do what the signs tell you to do. Read the answers across each line. Start: 6 × 2 = 12, 6 + 8 = 14.

1.	6	× 2	+ 8	− 3	+ 7	÷ 2	− 5	+ 6
2.	8	+ 2	− 2	÷ 2	× 2	+ 8	− 3	+ 5
3.	9	+ 9	− 9	+ 6	+ 5	− 1	+ 4	− 3
4.	7	− 6	+ 7	+ 8	− 3	+ 9	− 5	+ 5

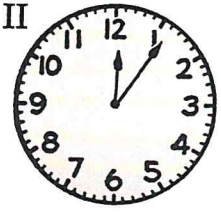
Pages 284 and 285 are to be used after page 145.

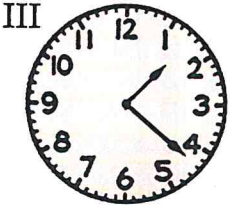
Telling Time in Minutes

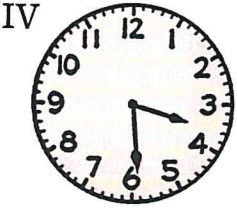
I 

1. Look at Clock I, at the left. On this clock, the minute hand has gone 2 minutes beyond the figure 3. The 3 means 15 minutes after the hour. So 15 + 2 = 17 minutes after the hour. The hour shown by the hour hand is 12. So the time shown by this clock is 17 minutes past 12 o'clock.

You can say this time in a short way: "twelve seventeen." You can write it 12:17.

II 

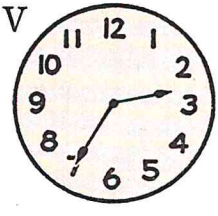
III 

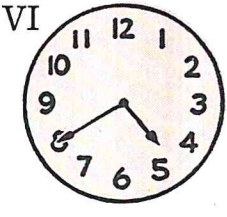
IV 

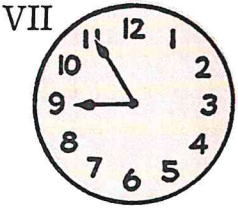
2. How many minutes past 12 does Clock II show?

3. How many minutes past 1 does Clock III show?

4. What time does Clock IV show?

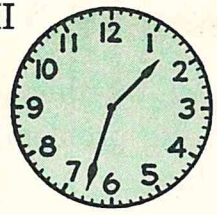
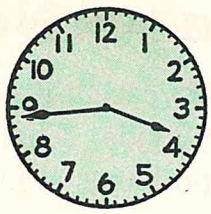
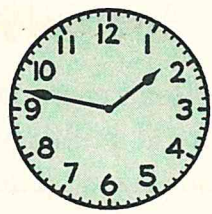
V 

VI 

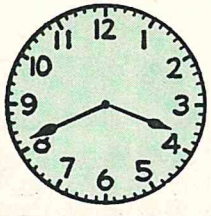
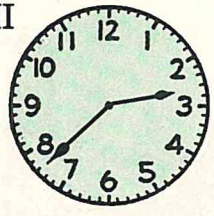
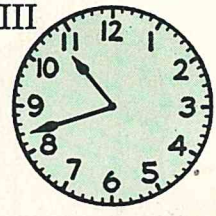
VII 

5. Clock V shows "25 minutes to 3." How many minutes to 5 does Clock VI show? What time does Clock VII show?

Pages 286 and 287 are to be used after page 149.

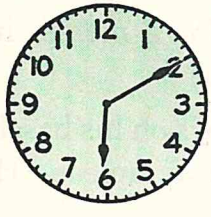
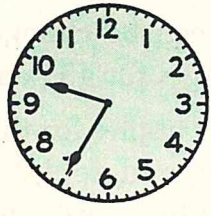
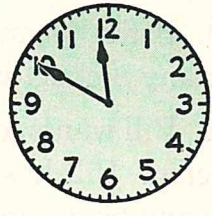
VIII  IX  X 

6. Clock VIII shows 27 minutes to 2. How many minutes to 4 does Clock IX show? What time does Clock X show?

XI  XII  XIII 

7. Clock XI shows 19 minutes to 4. This time can also be written 3:41. Tell in two ways what time Clock XII shows. What time does Clock XIII show?

Write in two ways the time that each of these clocks shows.

8. *a*  *b*  *c* 

9. What time does a clock show when the minute hand points to 3 and the hour hand points between 10 and 11?

Pages 286 and 287 are to be used after page 149.

Multiplying and Dividing by 5

Read each problem carefully. Decide whether you should multiply or divide. Then do the problem in your head. These problems are quickies.

1. Sally bought 5 cards of buttons with 6 buttons on each card. How many buttons were there on all five cards?

2. Ben bought 7 candy bars for 5¢ each. How much money did he need to pay for all the candy bars?

3. If five pennies can be changed for a nickel, how many nickels can I get for 45 pennies?

4. Bill wants to buy apples for the boys on his baseball team. Bill has 45¢, and apples cost 5¢ apiece. How many boys can Bill buy apples for?

5. Barbara bought 8 valentines. They cost 5 cents apiece. How much did all the valentines cost?

Pages 288 and 289 are to be used after page 155.

6. Jerry has 35 stamps. How many rows in his stamp book can he make if he puts 5 stamps in each row?

7. If 4 mother cats have 5 kittens apiece, how many kittens are there in all?

8. If marbles are 5 for a nickel, how many can I get for 5 nickels?

9. Tom bought 6 oranges for a nickel apiece. How much money did he have to pay?

10. Ann's mother gave her 15 cookies to divide equally among herself and four friends. How many cookies did each girl get?

11. Bill's father works 8 hours a day for 5 days each week. How many hours a week does he work?

12. Jean told Ann, "I am going to my uncle's farm for 5 weeks this summer." How many days is that?

13. Jean bought 9 sheets of colored paper to make Christmas cards. Each sheet cost 5¢. How much did the paper cost her?

14. Five children are to share 20 jelly beans equally. How many beans will each one get?

15. If I have 40¢ in my pocket, how many 5¢ cupcakes can I buy with the money?

16. I can buy 2 cookies for a nickel. How many can I buy with 5 nickels?

17. How many stamps are there in a 5-row sheet of stamps with 8 stamps in each row?

Pages 288 and 289 are to be used after page 155.

Shopping for the Twins

Pat and Polly are twins. Their mother dresses them just alike. She always has to buy two dresses, two coats, or two hats whenever she goes shopping for clothes for the twins.

Here are some of the problems she had when she took Pat and Polly to the store just before Easter.

1. First, she bought each girl a dress. The dresses cost $8.30 each. How much did she pay for both?

2. Next, she bought 2 coats. The coats were $14.00 each. How much did she have to pay for the coats?

3. Then they found 2 hats just alike. The hats cost $3.04 each. Find the cost of the two hats.

Pages 290 and 291 are to be used for enrichment after page 163.

4. Each of the girls wanted a purse to go with her coat. Two just alike cost $1.43 each. How much was this for both?

5. Their mother found shoes at $6.13 a pair which matched their outfits. Find the cost of the 2 pairs.

6. Then Pat and Polly found 2 pairs of socks which were 63 cents a pair. How much did both pairs cost?

7. Two birthdays cost money, too. Two pairs of skates at $4.10 a pair will cost how much?

8. Aunt Helen gave them two books. Each book cost $2.04. How much did Aunt Helen pay for both books?

9. Their mother wants to buy new spreads for their beds. If each spread costs $4.32, how much must she pay?

10. Father wants to get them school bags for their books. Two bags at 92 cents each will cost how much?

Making Up Problems

1. Make up an addition problem for this question. "How many children are there in one class?"

2. Make up a subtraction problem about how many sandwiches were left after the picnic.

3. Make up a subtraction problem about how much older a boy is than his little sister.

4. Make up an addition problem about the number of people who came to a puppet show that was given twice.

Pages 290 and 291 are to be used after page 163.

Problems Without Numbers

These problems do not have numbers in them, so you don't have to work them. Just write on your paper which process you would use to work each problem if you knew the numbers in it. Would you add, subtract, multiply, or divide?

1. If you know the cost of a baseball and the cost of a bat, how would you find the cost of both the baseball and the bat?

2. If you know the price of a camera and how much money you have saved for it, how would you find how much more money you need?

3. If you know Jean's age and the age of her older brother, Tony, how would you find the difference in their ages?

4. If I tell you the scores I make in a game of ring toss, how would you find my total score?

5. If you knew how many people were going on a picnic and how many sandwiches apiece they needed, how could you find how many sandwiches to make?

6. If you know how much a pound of sugar costs and how much money you gave the clerk to pay for it, how could you find how much change you should get?

7. If you know how many cupcakes you bought and how much you paid in all, how do you find the cost of each cupcake?

Pages 292 and 293 are to be used after page 171.

8. If you knew the weight of a pail full of honey and the weight of the same pail when it was empty, how could you find the weight of the honey?

9. If you knew the price of two toys, one of them costing more than the other, how would you find the difference in their cost?

10. If you knew how many pieces of candy in a box and how many boxes, how could you tell how many pieces of candy in all?

11. If you know how tall you were a year ago and how tall you are now, how can you find how much you have grown?

12. If you knew the number of cookies and the number of people to eat them, how could you tell how many cookies each person should get?

13. If you knew the temperature indoors one cold day and the temperature outdoors, how could you find how much warmer it is indoors?

14. If you know how much money you have and how much oranges cost apiece, how could you tell how many oranges you could buy?

15. Jean knows how many pennies she has in her bank. She knows how many pennies she has in her pocketbook. How can she find how many she has altogether without counting them?

16. How do you find the total cost of a puzzle and a game?

Pages 292 and 293 are to be used after page 171.

Using Measures in Problems

Do you remember measure facts? You will have to use one in each of these problems. On your paper, write the fact you need for each problem, then work the problem. You may need to look at a calendar to solve some of the problems.

1. Last September we went to school 18 days. How many days of September were not school days?
(September has ? days)

2. Mrs. Bell, one of Bob's customers, has asked Bob to sell her a dozen eggs. Bob has only 10 eggs just now. How many more eggs does Bob need to fill Mrs. Bell's order? (1 dozen = ? eggs)

3. Ann had 5 nickels in her purse. She bought a flower that cost 19¢. How much did she have left?
(5 nickels = ? cents)

4. Dick had a board a yard long. He cut off 18 inches for a shelf. How many inches were left?
(1 yard = ? inches)

5. Some boys took two dozen sandwiches on a hike. They brought 5 home uneaten. How many did they eat? (2 dozen = ?)

6. Bob had a quarter and a nickel in his pocket. How much did he have left after buying a 28¢ lunch?
(1 quarter + 1 nickel = ? ¢)

Pages 294 and 295 are to be used after page 175.

7. Tony is 1 year and 10 months older than Jean. How many months is this?

(1 year = ? months)

8. Peggy belongs to the Brownies. Her troop meets every week on Friday. Their last meeting was on the 19th of the month. On what date will they meet next?

(1 week = ? days)

9. Dick has two boards. One board is 3 yards long. The other is 10 feet long. Which board is longer? How much longer?

(3 yards = ? feet)

10. Ellen bought a game for 63 cents. She handed the clerk a half dollar and a quarter. How much change should she get?

(A half dollar and a quarter = ? ¢)

11. Sam had 5 dimes. If he bought a 45-cent handkerchief for his father, how much did he have left?

(5 dimes = ? cents)

12. Tom kept a weather record. In March, 19 days were cloudy or rainy. How many days were sunny?

(March has ? days)

13. Jim is visiting Bob for 2 weeks. He has been there 9 days. How many more days can he stay?

(2 weeks = ? days)

14. I must practice for one hour. I have practiced 38 minutes. How many more minutes must I practice?

(1 hour = ? minutes)

Pages 294 and 295 are to be used after page 175.

Multiplication and Division Quickies

Decide whether you will multiply or divide in each problem. Work the problems in your head. Tell the answers or write them on another paper.

1. Linda is going to a girls' camp for 3 weeks this summer. How many days will she be at the camp?

2. Dick can swim 24 feet. How many yards can he swim?

3. Ben's mother gave him 27¢ to buy 3-cent stamps for her at the post office. How many stamps can he buy?

4. Don and his father set out some cabbage plants. They had 3 rows with 8 plants in each row. How many plants did they have?

5. Sally bought 3 bananas for 7¢ apiece. How much did she pay for all three?

6. Sally bought 3 yards of narrow ribbon. The clerk said, "Fifteen cents, please." How much was the ribbon a yard?

7. Sally wanted to know how many feet of ribbon she had bought. How many feet is 3 yards?

8. Ellen has 18 candy hearts. To how many children can she give 3 hearts apiece?

9. It took Don 15 minutes to hoe 3 rows of corn in his garden. How many minutes was that for each row?

Pages 296 and 297 are to be used after page 187.

10. The boys set out 5 rows of chairs. They put 8 chairs in each row. How many chairs did they set out?

11. If Sam can walk 3 miles an hour, how many hours will it take him to walk 6 miles?

12. If Sam can ride his bicycle 6 miles an hour, how many miles can he ride in 3 hours?

13. How much must I pay for eight 2-cent stamps?

14. Tom's father found 21 pennies in his desk drawer. He divided them equally among his three children. How many pennies did each one get?

15. If doughnuts cost 3¢ apiece, how much will I have to pay for 9?

16. If cookies cost 3¢ apiece, how much will half a dozen be?

17. Bob took some eggs in a pail to the store to sell. The storekeeper reached in 6 times, and took out 3 eggs each time. How many eggs were there in the pail?

18. It takes me 3 minutes to walk 1 block. How long will it take to walk 9 blocks at that speed?

19. Two dozen sandwiches for 8 children will give each child how many sandwiches apiece?

20. If Ann saves 3 cents a day, how many days will it take her to save 15 cents?

21. It is 14 days to Jill's birthday. How many weeks is it until her birthday?

Pages 296 and 297 are to be used after page 187.

Are Your Answers Sensible?

There are three answers under each problem. By looking at the problem and thinking about it, you should be able to decide which answer is the sensible one. Write this answer on your paper, and then look at the problem again. Does your answer still seem sensible? Work the problem to be sure your answer is right.

1. Nora had 36 books. She got 4 more books for her birthday. How many books did she have then?

9 40 32

2. Nora has started to read one of her new books. If she reads 35 pages a day, in 5 days how many pages will she read?

175 40 7

3. Ann has a quarter. She wants to buy 5-cent chocolate bars with it. How many chocolate bars can Ann get for her quarter?

20 25 5

4. Jerry saw two packets of stamps in the store. One packet was priced 30¢ and the other was priced 5¢. What was the difference in price?

35¢ 6¢ 25¢

5. We put 40 chairs in 5 equal rows. How many chairs did we put in each row?

8 200 45

Pages 298 and 299 are to be used after page 195.

6. Ann and Jean gave a party. The food cost $1.80. If each girl paid half, how much did each pay?

90¢ $3.60 $9.00

7. Bob saved $5.00 a month for 6 months. How much did he save?

$30.00 $3.00 $300

8. Sally bought $3.86 worth of groceries and gave the clerk $5.00. What change should she get?

$1.14 $2.14 $8.86

9. Don's father bought 5 gallons of gasoline at 24¢ a gallon. How much did it cost?

$12.00 $1.20 29¢

10. Tom read the thermometer in the morning. It was 32° above zero. In the afternoon it was 61° above zero. How many degrees warmer was it then?

93 29 10

11. It rained 18 days in March, 14 days in April, 9 days in May. How many rainy days were there in these three months?

41 21 81

12. Don is planning his garden this spring. He wants 2 dozen tomato plants and 2 dozen cabbage plants. How many plants will he have in all?

24 4 48

13. Bob bought 50 baby chicks. Five of them died. How many of the chicks did Bob raise?

10 45 55

Pages 298 and 299 are to be used after page 195.

Do You Multiply or Divide by 4?

Number your paper 1 to 12. After each number, write × if you multiply in that problem, or ÷ if you divide. Then write the answer to the problem.

1. Ellen has 4 quart bricks of ice cream for her birthday party. How many people can she serve if she cuts each brick into 6 pieces?

2. Sally's mother sent her to the bakery to buy some cupcakes. She gave Sally 30 cents. How many 5-cent cupcakes can Sally buy? How many 6-cent cupcakes could Sally buy?

3. Bill bought 36 marbles. He gave Ann $\frac{1}{4}$ of them. How many marbles did Bill give Ann?

4. If a quart of lemonade will serve 4 people, how many people will a gallon of lemonade serve?

5. In a box of dominoes, Ben counted 7 dominoes in a row. There were 4 rows in the box. How many dominoes were there in the box?

6. Sue has a dozen cookies for herself and 3 other girls. How many cookies can each girl have?

7. If a quart of milk will serve 4 children, how many children will 8 quarts of milk serve?

8. Mrs. Lane bought 2 dozen oranges. If the Lanes use 4 oranges a day, how long will the 2 dozen oranges last?

Pages 300 and 301 are to be used after page 201.

9. Mary bought some valentines costing 4¢ each. If she paid the clerk 20¢, how many did she buy?

10. There are 28 children in our class. Miss Blake said, "One fourth of the class is absent today." How many children were absent?

11. Sue's mother needs 16 red buttons. If the buttons come 4 on a card, how many cards should she buy?

12. Don and his father have 3 dozen tomato plants to set out. If they put the plants in 4 rows, how many will they have in each row?

Supplying Missing Signs

Here are some addition, subtraction, multiplication, and division facts, with the sign missing. Copy them and finish them by filling in the missing signs.

	a	*b*	*c*
1.	9 ? 3 = 6	9 ? 3 = 12	9 ? 3 = 27
2.	9 ? 3 = 3	12 ? 4 = 3	12 ? 4 = 8
3.	12 ? 4 = 16	2 ? 8 = 16	2 ? 8 = 10
4.	16 ? 9 = 7	16 ? 2 = 8	5 ? 5 = 25
5.	5 ? 5 = 1	5 ? 5 = 10	5 ? 5 = 0
6.	10 ? 5 = 5	10 ? 5 = 2	18 ? 9 = 9
7.	18 ? 9 = 2	7 ? 8 = 15	7 ? 5 = 35
8.	10 ? 2 = 8	10 ? 2 = 5	4 ? 8 = 32
9.	4 ? 8 = 12	45 ? 5 = 9	9 ? 4 = 13
10.	9 ? 4 = 36	17 ? 8 = 9	18 ? 2 = 9

Pages 300 and 301 are to be used after page 201.

What Process Do You Use?

Work these problems on another paper. Beside each problem write **add, subtract, multiply,** or **divide** to show the process you use to work the problem.

1. Bill had 28 marbles. He traded a toy truck for 45 more. How many marbles did he have then?

2. Doughnuts were 35 cents a dozen at the store. How much did our class have to pay for 4 dozen for a class party?

3. Apples are 4 cents each. How many apples can our class buy if we have 84 cents left to spend for our party?

4. Sally had 75¢ when she went to the grocery store. She bought a dozen oranges for 49 cents. How much did she have left?

5. Jean put 7 quarters in her savings bank. How much money was she adding to her savings?

6. Sally bought a package of soap flakes for 27¢, a dozen oranges for 45¢, and some doughnuts for 35¢. Find the total cost.

7. Ann's mother gave her 75¢ to buy some beads. The beads cost 59¢. How much change did she get?

8. The total cost of a birthday present for Father is 84¢. If Sue and Bob share the cost equally, how much should each one pay?

Pages 302 and 303 are to be used after page 213.

Thinking About Measures

See how many of these questions you can answer.

1. What coin is worth half as much as a dime?
2. What measure is twice a pint?
3. What measure is one third of a yard?
4. How many things make a fourth of a dozen?
5. How many inches are there in $\frac{1}{4}$ yard?
6. One half gallon equals how many quarts?
7. How many days are there in one half of April?
8. What part of a gallon is a quart?
9. Which is more, $\frac{1}{2}$ of a year or $\frac{1}{4}$ of a year?
10. Which is less, a quarter or 2 dimes?
11. What two coins are worth 35 cents?
12. What two coins are worth 15 cents?
13. What three coins are worth 40 cents?
14. How many days are there in two weeks?
15. How many pints are there in a gallon?
16. Which is most, a pint, a gallon, or a quart?
17. Which is least, a week, a year, or a month?
18. Which is shorter, a yard, or 2 feet?
19. Which is more, 3 dimes, or 2 dimes and a nickel?
20. When the minute hand of a clock points to 8 and the hour hand points between 1 and 2, what time is it?
21. How many minutes does it take the minute hand to go from 12 to 2? From 1 to 5? From 4 to 9?

Pages 302 and 303 are to be used after page 213.

Problems With Extra Numbers

Each of these problems has an "extra number" which you don't need in working the problem. Find the extra number and write it on your paper. Then work the problem.

1. Jill and her sisters ate lunch downtown. Their lunches cost 69¢, 57¢, and 78¢. They gave the cashier $5.00. How much did their lunches cost?

2. Sam's family drove to Chicago, 945 miles away. On the first day they drove 11 hours, and went 453 miles. How many more miles did they have to drive?

3. There were 31 children in Tom's room. One day only 14 boys and 13 girls were present in his room. How many children were present that day?

4. Bill has 154 marbles, Tom has 138 marbles, and Jerry has only 98 marbles. How many more marbles would Tom have to get to have as many as Bill?

5. Our school auditorium has 486 seats. We sold 459 tickets to the school show, at 35¢ apiece. How many more seats were there than tickets sold?

6. Bill's father is 38 years old. He weighed 168 pounds this morning. Bill weighed 69 pounds. Bill's father was how many pounds heavier than Bill?

7. Mother bought Linda a dress which had been reduced from $4.60 to $3.95. She handed the clerk $5.00. How much did Mother save?

Pages 304 and 305 are to be used after page 223.

8. The Lanes were taking a 970-mile trip. The first day they got a late start and went only 129 miles. The second day, they drove 487 miles. How many miles had they gone at the end of two days?

9. Bill's father bought him a baseball glove costing $3.79, a baseball for $1.98, and a bat for $2.10. How much more did the glove cost than the baseball?

10. We put 28 green balls and 17 red balls on our Christmas tree. When we took the tree down, there were only 40 balls left. How many balls did we put on the tree?

11. Peggy wants to buy a tennis racket for $6.00 and 3 tennis balls costing 60 cents each. How much will all the tennis balls cost?

12. At a peanut hunt, Peggy found 48 peanuts, Sam found 26, and Bob only 9. How many peanuts did the two boys find?

13. Jim has saved $1.08. He wants to buy two games costing $1.47 and 96 cents. How much do both games cost?

14. Bob had 3 dozen eggs. He sold 2 dozen for $1.20. How many eggs did he have left?

15. There are 23 children in Sue's class. For a class party, Sue baked 27 oatmeal cookies and 25 sugar cookies. How many cookies did she bake?

Pages 304 and 305 are to be used after page 223.

Multiplication and Division Problems

Number your paper 1 to 9. Write **Multiply** or **Divide** after each number to tell which process you use in each problem. Then work the problem and write the answer.

1. Linda bought 3 Easter toy chickens for 39¢ each. How much did she pay?

2. At a school party, 4 children sold ice-cream sandwiches. Altogether, they sold 124. How many ice-cream sandwiches is that for each child?

3. The children got 5 cents for each ice cream sandwich. How much money did they take in for the 124 ice cream sandwiches they sold?

4. Tom earned $1.75 a week on his paper route. How much did he earn in 5 weeks?

5. Don, Sam, and Bob picked up 36 early apples that had fallen from some trees. They shared the apples equally. How many did each boy get?

6. If we sell 286 tickets to our school play for each of 3 nights, how many tickets will we sell?

7. Our school swimming pool is 35 yards long. How many feet long is it?

8. Our school playground is 633 feet long. How many yards long is the playground?

9. Don's mother wrote 81 Christmas cards. How much did 3-cent stamps for the cards cost her?

Pages 306 and 307 are to be used after page 225.

Using Money Numbers

Decide whether you should add, subtract, or multiply in each problem. Then work the problems on another paper.

1. Nancy paid $1.35 for some music and $.45 for a music notebook. How much did she spend in all?

2. Nancy pays her music teacher $1.25 a lesson. How much do 5 lessons cost?

3. Bill bought some Scout shoes for $6.95 and a scarf for 85¢. How much did he pay for both?

4. Bill's father said he would buy Bill a Scout knife for $1.18 or an ax for $1.80. How much more would the ax cost than the knife?

5. Ann wants to buy a doll carriage costing $7.00. She has saved $5.35. How much more money does she need to buy the carriage?

6. Don was helping his mother sell fruit at their road stand. He sold 3 baskets of peaches for 75 cents a basket. How much did he get for the three baskets?

7. In one week, Bob spent $3.85 for some baby chicks and $4.15 for feed for his chickens. How much did he spend that week?

8. Jerry's father bought 3 packets of stamps to give Jerry on his birthday. Each packet cost $1.25. How much did Jerry's birthday present cost?

Pages 306 and 307 are to be used after page 225.

Do You Add or Subtract?

Work these problems on another paper. After the number of each problem, write **A** if you add or **S** if you subtract. Then write the answer to the problem.

1. Ann had $2.00 to take some girls to a show. The tickets were $1.35. What change did Ann get?

2. Sally's mother paid 69¢ for meat and $2.04 for groceries. How much did she spend in all?

3. Sue's dress cost $3.98. Her mother's cost $15.75. How much did her mother pay for both dresses?

4. On a 570-mile trip, our speedometer says we have gone 483 miles. How much farther must we go?

5. Our school has 562 children. Of them, 278 are boys. How many girls go to our school?

6. Joe practiced his trumpet 19 minutes today. How much longer must he play to practice a half hour?

7. Jerry got $3.50 for his birthday. If he spends $1.59 for a knife, how much can he spend for stamps?

8. Ninety grown-ups (teachers and parents) and 324 boys and girls are coming to our picnic. How many people are coming?

9. Tom picked up 56 stones for his collection. He threw away 40 of them. How many did he keep?

10. Jerry got two new packets of stamps. One had 24 stamps in it and the other had 35. How many new stamps did he get?

This page is to be used after page 233.

Do You Multiply or Divide?

Work these problems on another paper. After the number of each problem, write **M** if you multiply or **D** if you divide. Then write the answer. See how many problems you can do as quickies.

1. If apples are 3 cents each, how many apples can Tony buy for 15 cents?

2. We paid 50 cents for 5 tickets for the merry-go-round. How much is this for each ticket?

3. Sue made a pan of fudge. There were 5 rows of fudge in the pan, with 10 pieces in each row. How many pieces of fudge were there in the pan?

4. Sally is cutting up strips of cloth for arm bands for play day. If each arm band is 9 inches long, how many can Sally get from a strip of cloth one yard long?

5. Grapefruit are 8 cents each. How much must Sally pay for 4 grapefruit?

6. Ellen can get 3 candy hearts for a penny. How many can she buy for 12 cents?

7. The Lanes have started on a 240-mile drive. How many miles must they go before they are half way?

8. Mother has mended 16 socks. How many pairs of socks has she mended?

9. Don says their cow gives 5 gallons of milk a day. How many quart bottles would this fill?

This page is to be used after page 235.

Working With Thousands

Thousands can be added, subtracted, multiplied, and divided just like hundreds, tens, and ones. In the examples below, see if you can handle numbers with four figures in them. Each time, be sure that the thousands go in the "thousands place."

Copy and add.

	a	*b*	*c*	*d*
1.	4386 1503	6107 3415	8299 159	3258 5397
2.	$14.37 25.49	$ 8.57 10.24	$16.99 1.89	$24.87 62.49
3.	1528 3387 2405	2989 3664 1398	$12.63 73.79 2.69	$36.76 3.68 28.39

Copy, subtract, and check.

4.	5934 2704	6038 1009	7654 5249	9847 4279
5.	$63.45 12.28	$28.17 15.69	$58.23 4.78	$79.22 43.63
6.	8928 2479	9734 4436	$98.40 25.42	$98.50 74.99

	a	*b*	*c*
7.	1050 — 941	4803 — 3206	3512 — 987
8.	$12.25 — $6.50	$30.19 — $9.44	$50 — $48.25

Pages 310 and 311 are to be used after page 239.

Copy and multiply.

	a	b	c	d
9.	407 × 5	609 × 3	723 × 4	907 × 2
10.	1148 × 2	3051 × 3	1009 × 4	1038 × 5
11.	\$8.16 × 4	\$5.26 × 2	\$4.08 × 3	\$2.19 × 5
12.	\$14.25 × 2	\$32.38 × 2	\$10.15 × 5	\$20.15 × 4

Copy, divide, and check.

13.	$4\overline{)4804}$	$3\overline{)9096}$	$2\overline{)8444}$	$5\overline{)5500}$
14.	$3\overline{)6303}$	$2\overline{)1448}$	$4\overline{)1680}$	$3\overline{)2436}$
15.	$2\overline{)1606}$	$5\overline{)2550}$	$3\overline{)2109}$	$4\overline{)3648}$

16. Find the sum of \$36.28 and \$3.94.
17. Find the difference between 1206 and 920.
18. Find half of 1226.
19. Find the product of 3 times 3027.
20. Find the quotient of 2080 divided by 4.
21. What number is twice as large as 6400?

Find the answers:

	a	b	c
22.	3749 + 906	3 × 3029	\$52.60 − \$8.75

Pages 310 and 311 are to be used after page 239.

Which Process Do You Use?

Tell which process you would use to solve each problem if it had numbers in it.

1. If you know how much a candy bar costs and how much money you have in your pocket, how can you tell how many candy bars you can buy?

2. You know the prices of four different things you want to buy. How can you tell how much money you must have to buy them all?

3. You know how many oranges you bought and how many you have used. How can you tell how many should be left?

4. You know the cost of a ticket to the movies and the number of tickets you are going to buy. How can you tell how much money you will need?

5. Your class is planning a trip. You know how many children are going, and how many can go in one automobile. How can you find how many automobiles will be needed?

6. Bob is planning to save the same amount of money from his eggs every month. If he sticks to his plan, how can he tell ahead of time how much money he will save in a year?

7. You know the price of a bicycle and how much money you have saved for it. How do you find how much more money you need?

This page is to be used after page 243.

The Number Facts for Reference

The Addition and Subtraction Facts

	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	10
2	3	4	5	6	7	8	9	10	11
3	4	5	6	7	8	9	10	11	12
4	5	6	7	8	9	10	11	12	13
5	6	7	8	9	10	11	12	13	14
6	7	8	9	10	11	12	13	14	15
7	8	9	10	11	12	13	14	15	16
8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17	18

The Multiplication and Division Facts

	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45
6	6	12	18	24	30	36	42	48	54
7	7	14	21	28	35	42	49	56	63
8	8	16	24	32	40	48	56	64	72
9	9	18	27	36	45	54	63	72	81

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